OVER 250 QUALITY ELECTRONIC KITS — EASY TO BUILD — SAVE UP TO 50% — GUARANTEED SPECIFICATIONS

HEATHKIT®

world's largest manufacturer of electronic kits

Heath Company, Benton Harbor, Michigan; Plant Location, St. Joseph, Michigan

a subsidiary of Daystrom, Incorporated

NO EXPERIENCE NEEDED!

here's why you can build a Heathkit regardless of your experience . . .

The famous Heathkit instruction manuals which accompany every Heathkit have reached their high degree of clarity through years of pioneering and searching for the one best way to enable you to build any kit regardless of your experience or skills. Here are some of the Heath innovations in kit instructions:

1. Complete circuit descriptions supported by easy-to-follow pictures and written without difficult technical language.

2. Assembly tips which show you how to do a professional job without specialized skills or background.

3. Parts pictured with life-size drawings to enable you to associate names with physical objects.

4. Double check-point system of construction notes to help you guard against errors or omissions.

5. Big pictorial diagrams which are right side up and bound in to match the text-steps.

6. Schematic tie-in drawings to show each part you are installing in each step.

7. Detail action-drawings with easy-to-read two-column text to show you *what* to do and *how* to do it.

8. Complete follow-up instructions to show you how to adjust your set, how to operate it properly.

In addition your Heathkit has been manufactured to make it easy to assemble. Each kit has a prefabricated chassis so you can begin assembly the moment you receive your kit without the bother of any "hardware" work. Each kit contains an ample, free supply of rosin-core solder for your convenience. Many kits include factory-built sub-assemblies to speed your efforts and assure factory-built performance without need of alignment. Each kit is scientifically packaged in simple, convenient containers which combine related and small parts for quick sorting.

Heath's expert technician-correspondents are at your beck and call at any time to answer your construction questions or to make recommendations on additional kits. It's another free, extra service just for you to make your Heathkit building easier and more fun.

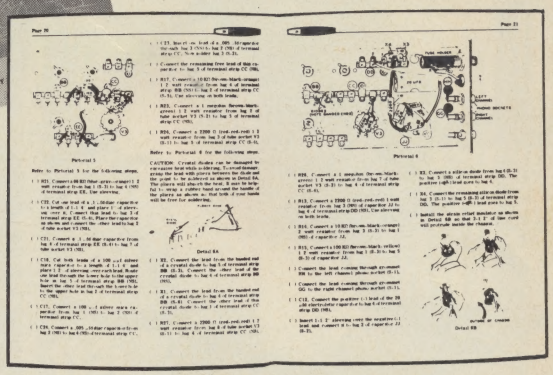
All Heathkits are "proof-built" by non-technical people prior to their release for sale to assure the ease of assembly and accuracy of instructions. In this way, Heath can guarantee each kit's performance specifications, regardless of the experience of the builder.

Finally, proof-positive that you can build a Heathkit is the fact that millions of others just like you have done it! So, order your Heathkit now with the assurance that *you* can build it.

Money Back Guarantee

Heath Company unconditionally guarantees that each Heathkit® product assembled in accordance with our easy-to-understand instruction manual must meet our published specifications for performance or your purchase price will be cheerfully refunded.

Prove To Yourself That Heathkits Are Best . . . Easiest To Build!



Examine the famous Heathkit instruction manuals . . . before you buy! . . . see the quality, design, and ease of assembly for yourself! Order the actual instruction manuals for your favorite Heathkits. Check the superiority of Heathkit design, clarity and simplicity of the instruction manuals, the completeness of direction which not only shows you what to do but how to do it! These are the manuals which have made Heathkits famous . . . complete with parts description and illustration, soldering and construction tips, step-by-step instructions with their built-in "double check" system to eliminate errors, schematics and specifications, even operation and servicing notes. Most Heathkit manuals are available for the low cost of just 50c. Manuals for HX-10, HW-10, HW-20, and GD-232, because of their large size, cost $2. (Manuals for the EK, EF, and EU series of educational kits are not available for separate sale). Order your favorite Heathkit manual by the model number of the kit it accompanies, state "manual only" on the order blank. Cost of the manual includes postage.

ANY HEATHKIT MANUAL EXCEPT EXCEPTIONS NOTED ABOVE, 50c

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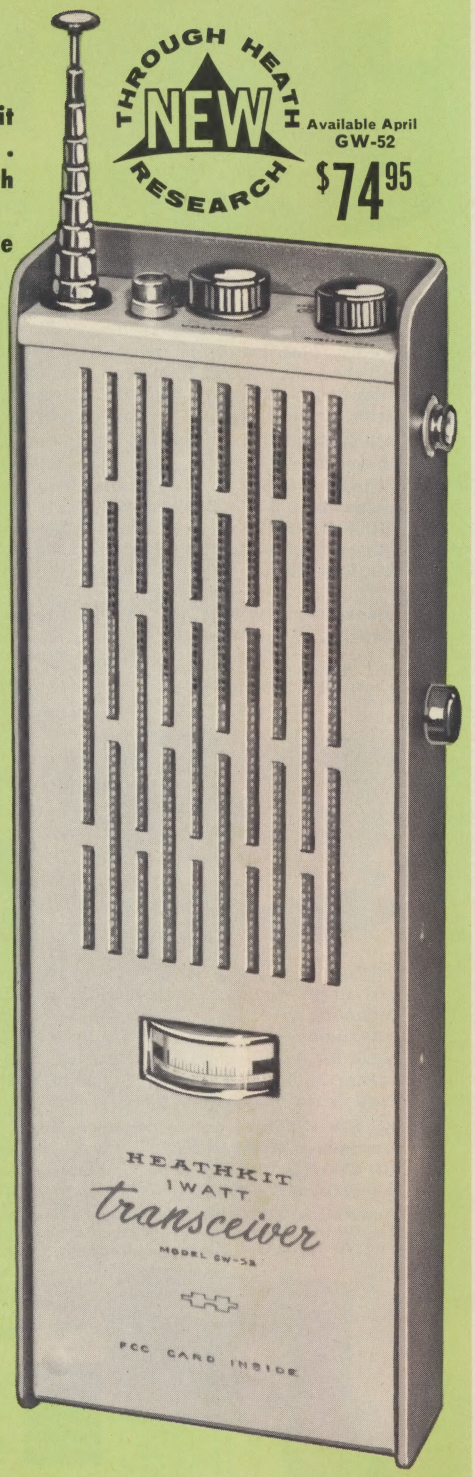
See Your 1963 Heathkit Catalog For Complete Listings

CITIZEN'S BAND

NEW! . . . Powerful, 1-watt Heathkit CITIZEN'S BAND "WALKIE TALKIE" . . . A Tremendous Performer, Loaded with Extras! A Tremendous Value, Just $74.95 including $20 Rechargeable Battery! Only $139.95 a Pair!

THROUGH HEATH RESEARCH — NEW — Available April GW-52 — $74.95



- **Rugged, 10-transistor, 2-diode circuit**
- **Long-range transmitter—1-watt input to final**
- **Sensitive superhet receiver—½ UV for 10 DB S/N ratio**
- **Crystal controlled transmit & receive channels**
- **Built-in squelch & automatic noise limiter functions**
- **Powerful rechargeable nickel-cadmium battery**
- **Built-in battery condition meter**
- **Built-in battery charger—recharges from 117 VAC or 12 VDC source**
- **Lightweight, compact—easy to carry**

The new Heathkit GW-52 is a "man-size" portable CB transceiver designed for rugged duty and reliable 2-way radio communications over extended distances. Its powerful transmitter with 1-watt input delivers a "solid" signal at ranges of three to five miles between units and more with external antenna. The receiver, with ½ microvolt sensitivity, pulls-in weak signals with ease! Adjustable squelch silences the receiver during standby and an automatic noise limiter assures crisp, clear reception and maximum intelligibility of conversations. Kit includes a heavy-duty 10-cell rechargeable, nickel-cadmium battery with 500 milliampere-hour rating that will outlast conventional batteries many times over! Battery life is 1500 hours minimum (90% receive, 10% transmit duty cycle) and life expectancy is as high as 5000 hours (over two years of normal workday use) . . . a tremendous savings in operating costs! Convenient too! . . . no need to remove or replace batteries while charging. A transformer-type charger is built-in for 117 volts AC and a 6-foot cord with cigar lighter plug is provided for charging from a 12 volt car battery. The GW-52 may be used while charging on 117 V AC . . . allowing constant, ready communications at all times. The many operational and convenience features designed into the GW-52 make it ideal for the serious CB operator, builder, contractor, sportsman, etc. Easy circuit-board construction. A leather shoulder strap and elastic hand strap are furnished for easy carrying on the job. Housed in rugged two-tone green aluminum case. Complete with crystals for one channel (specify), rechargeable nickel-cadmium battery, power cords, earphone, FCC license pack and instructions.

Kit GW-52...4 lbs....no money down, $8 mo.....**$74.95**
Kit GW-52-2 (pair)...8 lbs....no money down, $13 mo.....**$139.95**

SPECIFICATIONS—RECEIVER: Single channel crystal controlled superheterodyne. **Sensitivity:** ½ microvolt for 10 db signal-to-noise ratio. **Selectivity:** 7 kc at 6 db. **Audio power output:** 250 milliwatts. **TRANSMITTER: Input power to final stage:** 1 watt nominal. **Transmitter frequency:** Crystal controlled (any one channel, 1 through 24). **Modulation:** High level AM limited to less than 100%. **Controls:** Off-On-Volume and Squelch. Push-to-talk switch on side of cabinet. **Battery:** 12.5 V. (500 mah rechargeable nickel cadmium; 12 hrs. use per charge). **Battery life:** 1500 hrs. min. 5000 hrs. likely in normal usage. **Charging source:** 117 VAC or 12 VDC. **Total receiver current drain, standby:** Approx. 12, milliamps. **Total transmitter current drain:** Approx. 135 milliamps. **Antenna:** 35" whip type, completely collapsible into cabinet, or external. **Crystals:** Subminiature, plug-in type, tolerance .005%. **Speaker-Microphone:** 2½" round, permanent magnet type. **Earphone jack:** Miniature-type (earphone supplied). **Transistors and diodes:** 1-2N1726 RF amplifier; 1-2N1727 Converter; 2-2N1108 IF amplifier; 3-2N185 Audio amplifier; 1-R425 Transmitter oscillator; 1-R424 RF driver; 1-2N2218 RF output; 1-Germanium Diode-Detector; 1-Silicon Diode—Squelch and noise limiter. **Meter:** Indicates battery condition. **Cabinet dimensions:** 10-15/16" H x 3⅜" W x 1-11/16" D.

Deluxe 9-Transistor "WALKIE TALKIE"

- **No license required to operate**
- **Crystal controlled transmitter & receiver**
- **Superheterodyne receiver with RF stage**
- **Built-in squelch & automatic noise limiter**
- **1 to 3 mile operating range**

GW-21 $44.95

Superb performance and portable convenience team-up in the Heathkit GW-21 to bring you dependable 2-way radio communications at less than half the cost of comparable units! Deluxe features include a sensitive superheterodyne receiver for long-range reception, adjustable squelch and automatic noise limiter for crisp, clear signals and a high efficiency transmitter for power-packed communications. Its dependable 9-transistor circuit operates up to 75 hours on a single 9-volt battery. Operating range is 1 to 3 miles between similar units . . . up to 10 miles when used with Class "D" licensed CB units. Assembly is simple with printed-circuit board and easy-to-follow instructions furnished. Easy to operate, too, with on/off volume, squelch and push-to-talk switch controls. Kit is complete with crystals for one channel (specify). Less battery. Two-tone green color. Order a pair and save!

Kit GW-21...2 lbs.,,,no money down, $5 mo...**$44.95**
Kit GW-21-2 (pair) 4 lbs....
no money down, $9 mo.....**$84.95**
Assembled GWW-21...2 lbs....
no money down, $8 mo.....**$71.95**
Assembled GWW-21-2 (pair) 4 lbs....
no money down, $13 mo.....**$136.50**
GWA-30 Battery Set: (2) one for operation,
one spare. 1 lb.....**$2.95**

SPECIFICATIONS—Receiver: Crystal-controlled superheterodyne. **Sensitivity:** 1 uv for 10 db s/n ratio. **Transmitter:** Crystal-controlled, any channel 2 to 23 in 11 meter citizens band, (unlicensed). **RF input power:** 100 milliwatt. **Battery:** 9 volt. **Antenna:** 35" whip. **Circuit:** 9 transistor, 2 diode. **Dimensions:** 7⅞" H x 3⅝" W x 1⅝" D.

Low Cost 4-Transistor "WALKIE TALKIE" . . . Fun to Build . . . Fun to Use!

A Sensational Value at New Low Prices!

- **No license, forms, tests or age limit**
- **Crystal controlled transmitter**
- **Super-regenerative receiver**
- **Small, compact, neatly styled**

Kit Form or Factory Assembled — $19.95 — GW-31

Anyone can build and use this handsomely styled 2-way radio "Walkie Talkie"! Its small, compact size makes it easy to carry on trips, perfect for the sportsman, Boy Scout, farmer, and many more who have a need for dependable communications up to a mile or more. A single 9-volt battery lasts up to 75 hours. Kit includes all parts, instructions and crystal for one channel (specify). Less battery.

Kit GW-31...2 lbs.....**$19.95**
Kit GW-31-2 (pair) 3 lbs....no money down,
$5 mo.....**$35.00**
Assembled GWW-31, 2 lbs....no money down,
$5 mo.....**$29.95**
Assembled GWW-31-2 (pair)...4 lbs....
no money down, $6 mo.....**$55.00**
GWA-30: Battery set: (2) one for operation,
one spare. 1 lb.....**$2.95**

SPECIFICATIONS—Receiver: Super-regenerative detector. **Sensitivity:** Useable with signals as low as 4 uv at antenna. **Transmitter:** Crystal-controlled, any channel 2 to 23 (unlicensed) in 11 meter citizens band. **RF input power:** 90 milliwatt. **Battery:** 9-volt. **Antenna:** 36" whip. **Circuit:** 4 transistor. **Dimensions:** 5⅞" H x 3⅛" W x 1½" D.

Build Your Own Citizen's Band 2-Way

Deluxe "Master Station" CB TRANSCEIVER
. . . most complete, most versatile . . . a tremendous value!

Kit Form or Factory Assembled

Kit Available April
Wired Model Available June

GW-42 $119.95

• 5 Crystal-controlled transmit & receive channels • Built-in 3-way power supply • Built-in 4-tone selective call circuitry • All-channel tuning • Tuning meter • Adjustable squelch • Automatic noise limiter

Every imaginable feature has been incorporated in the advanced-design GW-42 to bring you the very finest in CB operating facilities. Operates anywhere with its built-in 3-way power supply! Ideal for either "mobile" or "fixed" installations . . . perfect as base station for GW-32 mobile transceivers. Crystal-controlled accuracy, ½ uv receiver sensitivity, push-to-talk microphone and many more features including built-in 4-tone selective call circuitry to permit individual call of up to four units operating on the same frequency. Beautifully styled in two-tone brown with anodized speaker grille, raised panel escutcheon, lighted channel selector, tuning meter and slide-rule dial, the GW-42 presents a rich, quality appearance that matches its performance. Easy to assemble, too, with three circuit boards and precut, cabled wiring harness. Kit is complete with AC & DC power cables, PTT microphone and crystals for one channel (specify). 22 lbs.

Kit GW-42, no money down, $11 mo. **$119.95**
Assembled GWW-42, no money down, $18 mo. **$189.95**

GENERAL DESCRIPTION—Receiver section: 6 tube superheterodyne circuit with RF amplifier, squelch, noise limiter, variable or crystal receiver tuning, tuning meter and built-in tone squelch with four front panel selected tones. **Tuning range:** (Crystal) Up to 5 switch-selected channels; (Variable) Tunes all 23 channels. **Intermediate frequency:** 455 kilocycles. **Sensitivity:** ½ microvolt or less for a 10 db signal to noise ratio. **Selectivity:** 40 db attenuation with adjacent channel 10 kc away. **TRANSMITTER SECTION: Nominal power input to final RF amplifier:** 5 watts. **Frequency control:** 3rd overtone quartz crystal as selected by the 5 position channel selector switch. **Frequency control effectiveness:** Operating frequency will be within .005% of nominal crystal frequency over an ambient temperature range of −20 to +130 degrees F. **Modulation:** AM plate modulation, automatically limited to less than 100%. **Output impedance:** 50-70 ohm. **TONE SQUELCH SECTION: Frequency control:** Resonant reed relay; with reeds used for generation of calling tone and frequency selection during monitoring. **Controls:** Volume on/off; Receiver tuning; Channel selector; Tone selector; Call switch; Squelch on/off; Noise limiter on/off, Reset time control; Power selector. **Tube complement:** 6CB6, Receiver RF amplifier; 6U8, Triode receiver crystal oscillator, pentode mixer; 6C4, Variable oscillator; 6BJ6, 1st IF amplifier; 6BJ6, 2nd IF amplifier; 6BJ7, Detector diode, squelch diode, noise limiter diode; 6AN8, Pentode first audio amplifier, triode microphone preamplifier; 6AQ5, Combination audio output/modulator; 6AU8, Triode transmitter oscillator, pentode driver; 6AQ5, RF final amplifier; 6AN8, Voltage amplifier, cathode follower (tone squelch section); 6C4, Relay control tube (tone squelch section). **Power requirements:** AC at 105-125 volts, 60 cycles, 70 watts; 6VDC at 9 amps; 12VDC at 5 amps. **Dimensions:** 5⅞" H x 17½" W x 10½" D.

Heathkit 4-Tone SELECTIVE CALL Kit . .
ideal for use on crowded CB channels

- Eliminates unwanted conversations
- Permits selective calling of CB units
- Operates with most popular transceivers
- Easy to assemble and install

One GD-162 with each of your CB transceivers provides complete selective calling capability on both transmit and receive. Four different tone signals permit individual call of up to four units operating on each frequency . . . 92 possible combinations. Once installed, the CB units in your system will remain silent until actuated by the proper tone signal to which they are tuned. 6 lbs.

Kit GD-162A (AC) . . . no money down, $5 mo. **$33.95**
Kit GD-162D (DC) . . . no money down, $5 mo. **$37.95**
Assembled GDW-162A (AC) **$55.95**
Assembled GDW-162D (DC) **$59.95**

SPECIFICATIONS—Power requirements: AC version; 15 watts. DC version; 6V—2 amps; 12V—1.25 amps. **Controls:** Input and output level controls permit use with a wide variety of transceiver designs. A "Reset Time" control permits variations in "Speaker on" time after a tone is received. **Dimensions:** 6¼" W x 4¼" H x 6¾" D.

Special-Value CB TRANSCEIVER
for business or personal use

Kit Form or Factory Assembled

GW-22A $59.95

- 5 Crystal-controlled transmit & receive channels
- Built-in squelch & automatic noise limiter
- Sensitive superhet. receiver with RF stage
- Optional tone squelch selective-call circuitry

An outstanding value for the serious CB user! Employs latest design features for long range communications with many extras for complete operating convenience and versatility! Improved push-to-talk circuitry eliminates need for relay. Optional selective-call circuitry in the GW-32 models gives added versatility and enjoyment in CB operations. This feature permits individual calling of up to four different units operating on the same channel frequency, eliminates unwanted CB conversations, stops speaker hiss and noise during standby. Attractively styled in two-tone brown with anodized trim. Crystals supplied for one channel (Specify).

Kit GW-22A (120 v. ac) Without Selective-Call. 11 lbs., $6 mo. **$59.95**
Assembled GWW-22A (120 v. ac) 13 lbs., $10 mo **$99.95**
Kit GW-22D (6 or 12 v. dc) Without Selective-Call. 11 lbs., $7 mo. **$64.95**
Assembled GWW-22D (6 or 12 v. dc) 13 lbs., $11 mo. **$104.95**
Kit GW-32A (120 v. ac) With built-in Selective-Call. 12 lbs., $9 mo. **$84.95**
Assembled GWW-32A (120 v. ac) 13 lbs., $13 mo. **$136.95**
Kit GW-32D (6 or 12 v. dc) With built-in Selective-Call. 12 lbs., no money down, $9 mo. **$89.95**
Assembled GWW-32D (6 or 12 v. dc) 13 lbs., $14 mo. **$141.95**

GENERAL DESCRIPTION—Receiver: 5-tube superheterodyne with RF stage, crystal-controlled, on up to 5 of the 23 channels as determined by the particular crystal(s) installed. **Sensitivity:** ½ microvolt for a 10 db signal-to-noise ratio. **Transmitter:** Power input to final RF amplifier, nominal 5 watts. **Power requirements:** GW-32A—120 volts, 50/60 cps AC, 50 watts; GW-32D—6½ volts DC, 8.0 amps, 13 volts DC, 4.5 amps. **Dimensions:** 9¼" D x 6¼" H x 9½" W.

A time-honored favorite . . .
Heathkit GW-11 CB TRANSCEIVER

$69.95 GW-11A

Kit Form or Factory Assembled

- 3 crystal-controlled transmitting channels • Crystal-controlled or variable receiver tuning • Automatic noise limiter — Adjustable squelch • Push-to-talk microphone—tuning meter

Thousands of these transceivers in use across the nation testify to its popularity and proven performance! Its modern low-profile styling lends itself perfectly to underdash mounting in automobiles as well as presenting a handsome appearance in home installations. Features include a sensitive superheterodyne receiver, an extra transmitter stage for increased power, improved push-to-talk circuitry to eliminate costly relays, and many more! Beautifully styled in mocha & beige. Complete with microphone and crystals for one channel (specify). 12 lbs.

Kit GW-11A (120 v. ac) . . . no money down, $7 mo. **$69.95**
Assembled GWW-11A (120 v. ac) . . . $10 mo. **$99.95**
Kit GW-11D (6 or 12 v. dc) . . . no money down, $7 mo. **$69.95**
Assembled GWW-11D (6 or 12 v. dc) . . . $11 mo. **$104.95**

GENERAL DESCRIPTION—Receiver sensitivity: 1 uv signal at antenna input produces 10 db signal to noise ratio. **Transmitter section:** power input to final RF amplifier; nominal 5 watts. **Power requirements:** 120 v. AC version, 55 watts; 6.5 v. DC version, 10 amps; 13 v. DC version, 6 amps. **Dimensions:** 4½" H x 15" W x 5¾" D.

Low Cost CB Value Sensation . . .
Heathkit "Basic" CB TRANSCEIVER

Kit Form or Factory Assembled

GW-12A $39.95

- Single channel crystal-controlled accuracy • Sensitive superheterodyne receiver • Built-in squelch & noise limiter functions • Convenient push-to-talk microphone

This high performance CB transceiver eliminates all the frills yet offers sophisticated circuitry to bring you an exceptionally clean, easy to operate unit that will perform on a par with the best available. Its sensitive superheterodyne receiver, simple control arrangement and single channel crystal-controlled transmitter and receiver assure top performance at all times. Ideal for fleet truck installations where only one channel is desired in each mobile unit. AC power supply is built in and provision is made for plug-in accessory DC power supply. Complete with crystals (specify channel), and push-to-talk mike. Two-tone brown color.

Kit GW-12A (AC only) 10 lbs. . . . no money down, $5 mo. **$39.95**
Assembled GWW-12A (AC only) 10 lbs. . . . no money down, $8 mo. **$79.95**
Kit GW-12D (AC & DC) 12 lbs. . . . no money down, $5 mo. **$44.95**
Assembled GWW-12D (AC & DC) 12 lbs. . . . no money down, $9 mo. **$84.95**
GWA-12-1; DC Power Supply, for GW-12A only. 3 lbs. **$7.95**

GENERAL DESCRIPTION—Receiver sensitivity: 1 uv signal at antenna input produces 10 db signal to noise ratio. **Transmitter section:** power input to final RF amplifier; does not exceed 5 watts. **Power requirements:** 120 v. AC operation, 50 watts; 6½ v. DC, 8 amps; 13 v. DC, 4 amps. **Dimensions:** 5⅜" H x 8⅜" W x 8" D. 9" D. with GWA-12-1.

Radio...Save With Heathkit®

New Heathkit "Marine" Citizen's Band TWO-WAY RADIO . . . Matches Heathkit Marine Gear Styling

THROUGH HEATH RESEARCH NEW

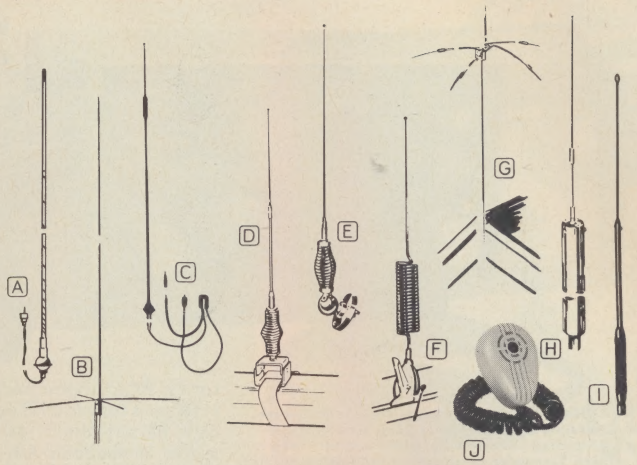
MW-33 $89.95
Kit Available May

• RF stage for long-distance reception • Efficient transmitter circuitry for extra range • 5 crystal-controlled transmit/receive channels • Variable receiver tuning of all channels • Crystal filter for greater selectivity • 3-way power supply—6 or 12 VDC or 117 VAC

Handsomely styled in the Heathkit Marine motif the new MW-33 represents the latest addition to our Marine line. Its versatile performance and operational features make it ideal for use aboard motor and sailing craft, in automobiles or general all-around use. A built-in 3-way power supply permits operation on 6 or 12 volt battery power or standard 117 volt AC household current. Circuit features include an RF amplifying stage for long-distance reception, half-lattice crystal filter for greater adjacent channel selectivity, built-in low-pass filter to reduce the possibility of television interference, and improved push-to-talk circuitry for all-electronic switching . . . no relay! Adjustable squelch and automatic noise limiter functions further assure crisp, clear communications. Efficient transmitter circuitry delivers a solid signal output with maximum allowable input of 5-watts for extra communication range. The built-in tuning meter automatically switches to show relative power output and received signal strength. 5 crystal-controlled transmitting and receiving channels plus variable receiver tuning afford maximum operating flexibility, a tremendous help when the CB bands are unusually active. Complete with microphone, AC & DC power cables, and crystals for one channel (specify). 18 lbs.

Kit MW-33, no money down, $9 mo. **$89.95**

SPECIFICATIONS—RECEIVER SECTION: Sensitivity: ½ microvolt for 12 db S-N ratio. **Selectivity:** 3 db down @ 4 kc; 40 db down @ 6 kc. **Intermediate frequency:** 455 kc. **Tuning range:** Crystal, 5 channels; Variable, all 23 channels. **TRANSMITTER SECTION: Nominal power input:** 5 watts. **Transmit channels:** 5, crystal controlled. **Modulation:** High level AM limited to less than 100%. **Output impedance:** 50-70 ohm. **Tube complement:** 6BZ6, RF amplifier; 6U8, Triode crystal oscillator pentode mixer; 6U8, IF amplifier; 6AL5, Squelch, ANL; 6AN8, Pentode audio driver, triode mike amplifier; 6AQ5, Audio output & modulator; 6AU8, Transmitter oscillator & buffer; 5763, RF final; 6AT6, Receiver variable oscillator. **Power requirements:** 110 VAC @ 70 watts; 12 VDC @ 5 amps; 6 VDC @ 10 amps.



Big-Value CB Accessories

A MODEL GY-12 COWL MOUNT MOBILE ANTENNA 2 lbs. **$8.95**
48" fiberglass whip. Patented rocker support for 8-point ground. Complete with 15' RG-58U cable and connector.

B MODEL GDP-673 ANTENNA SPECIALISTS M-81 BASE STATION CB ANTENNA 10 lbs. . . . . **NET $24.87**
5-section, end-fed, ¼ wave CB antenna. Heavy walled, aluminum tubing. Four radials provide RF decoupling. Gives 6 db gain over other single element types. High "Q" phasing transformer, 50' RG-58U cable and mounting bracket included.

C MODEL GDP-683 ANTENNA SPECIALISTS M-103 COWL MOUNT "DUAL" MOBILE ANTENNA 8 lbs. . . . . **NET $14.94**
Replaces auto antenna . . . allows use of both AM radio and CB unit from one antenna. Automatic dividing harness has 1 ft. cable for AM radio, 2 ft. cable for CB unit, 5 ft. cable to antenna. 46" whip collapses to 31". Center loaded. PL-254 connector.

D MODEL GY-31 BUMPER MOUNT MOBILE ANTENNA 6 lbs. **$14.50**
Two-section 102" stainless steel whip with spring base and stainless steel strap mount. 20' RG-58AU cable, and hardware.

E MODEL GY-21 BALL MOUNT MOBILE ANTENNA 4 lbs. **$15.95**
Two-section 102" stainless steel whip with cadmium plated spring base and swivel ball mount. 20' RG-58AU cable.

F MODEL CBU-1 "UTILITY" ANTENNA . . . 2 lbs. **$9.95**
For mobile or fixed station temporary use. Has clip mount and bracket, 45½" base loaded antenna. 12' cable, connector.

G MODEL CBF-1 GROUND PLANE ANTENNA . . . 6 lbs. **$17.95**
Non-directional ¼ wave antenna measuring 9'4" from bracket bottom to radiator top. Includes 50' RG-58U cable and clamp.

H MODEL GY-11 VERTICAL COAXIAL ANTENNA . . . 7 lbs. **$21.95**
Omni-directional 18' half-wave antenna (2-section 9' aluminum rod top, 2-section 9' aluminum skirt. 2" diam.). Mounts on a 12' length of ¾" IPS pipe (not supplied). Includes 50' RG-58AU cable and connectors. Has low radiation angle and low swr.

I SPECIAL "HUSTLER" CB ANTENNA, p. 35, from $13.90

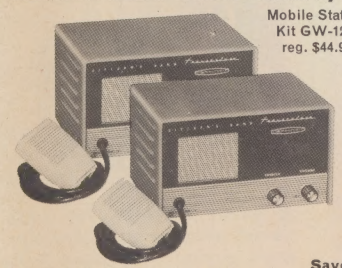
J MODEL GH-12 MICROPHONE, 1 lb. **$6.95**
Push-to-talk type with tailored response for crisp communications. Complete with coiled cable, less connector.

EXTRA TRANSMITTER & RECEIVER CRYSTALS 1 lb. . . . . ea. **$2.95**
Specify Heathkit model used, channel No. desired (1-23 plus new CAP freq.), and whether for receiver or transmitter use. Specify 1st and 2nd choice of channel. When ordering for several units, specify each.

ATTENTION CAP MEMBERS

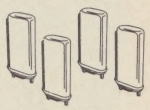
All Heathkit CB transceivers may be realigned for crystal controlled operation on the new CAP frequency of 26.620 mc, using standard manual procedure. We stock these crystals at regular prices; just specify crystals for "CAP CB frequency" when ordering. Check the GW-12 opposite, it makes an ideal second transceiver for CAP.

BEST-BUY! Mobile & Fixed Station System With Accessories . . . $99.95



Mobile Station Kit GW-12D reg. $44.95

Fixed Station Kit GW-12A reg. $39.95

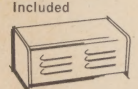


Four Crystals Included, two for each transceiver

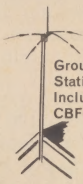
Complete Package **$99.95**

Save $11.85 Order #CBS-1, 30 lbs.

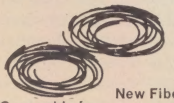
Two Push-To-Talk Microphones Included



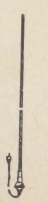
DC Power Supply for Mobile Operation Included with GW-12D



Ground-Plane Fixed Station Antenna Included (Model CBF-1) reg. $17.95



15' Coax cable for Mobile Antenna
50' Coax cable for Fixed Antenna

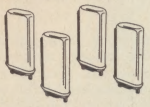


New Fiberglass Mobile Antenna Included (Model GY-12) reg. $8.95

SPECIAL-VALUE! 5 Channel Mobile & Fixed Station System With Selective-Call . . . Just $194.95 . . . Save $17.85!

Mobile Station Kit GW-32D reg. $89.95

Fixed Station Kit GW-32A reg. $84.95



Four crystals included, two for each transceiver

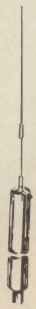
Complete CB Package **$194.95**

Save $17.85 from reg. price
Order #CBS-2, 35 lbs.

Two Push-To-Talk Microphones Included

Stainless Steel Mobile Antenna included (Model GY-21, reg. $15.95)

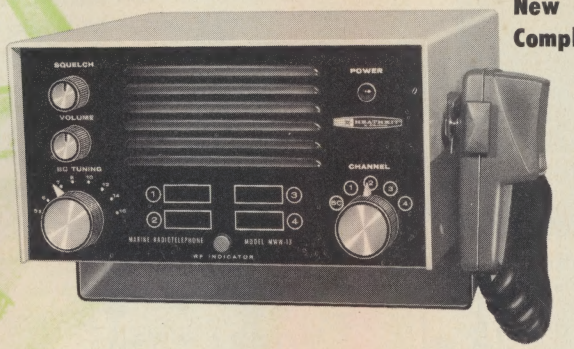
15' Coax cable for Mobile Antenna
50' Coax cable for Fixed Antenna



"Fixed" Coaxial Antenna included (Model GY-11, reg. $21.95)

Equip with Heathkit® Marine...Enjoy

New Heathkit 25-watt MARINE RADIOTELEPHONE — just $164.95
Complete system for owner installation saves $14.95—only $189.95



THROUGH HEATH NEW RESEARCH

- Covers 2-3 MC Marine and Standard Broadcast Bands
- 4 Crystal-Controlled Transmit & Receive Channels
- 10-Transistor, 5-Diode, 3-Tube Circuit
- Built-In Heavy-Duty Transistor Power Supply
- FCC Type Accepted
- Ideal For Outboard Cruisers, Runabouts

MWW-13S
$189.95

This new low-cost Radiotelephone package is neat, trim and ready to install! System includes the factory assembled and tested MWW-13 Radiotelephone, matching 13′ antenna, push-to-talk microphone, all accessories, FCC license pack, and complete instructions for easy owner installation and operation—pre-tuned for use with outboard ground systems. Power range is ideal for moderate cruising ranges. Low battery drain, 4 crystal-controlled transmit & receive channels, powerful 25-watt transmitter, dependable 8-transistor receiver and built-in heavy duty transistor power supply assure dependable communications and trouble-free service. 2182 & 2638 kc crystals are supplied and variable broadcast band tuning brings your favorite programs for shipboard entertainment. Handsomely styled in marine white & black with blue trim. Heavy gauge aluminum construction throughout. Built-in circuit breaker protection—no fuses!

SPECIFICATIONS—Frequency range: 2-3 mc. **Broadcast:** 550-1600 kc. **Receiver sensitivity for 10 DB S/N ratio:** Marine—3 microvolts. Broadcast—20 microvolts. **Audio output:** 3 watts to internal speaker. **Transistor complement:** (1) T1363 Mixer; (1) T1364 Oscillator; (2) T1364 I.F.'s; (1) 2N1274 First Audio; (3) R-265 Audio Driver and Power Converters; (2) 2N301 Audio Output and Modulator; (5) diodes, AVC overload, Squelch, Noise Limiter, and Detector. **Transmitter RF input:** 25 watts. **RF output:** 13 watts. **Transmitter tube complement:** (1) 6AK6 Oscillator; (2) 6AQ5 RF amp. **Power requirements:** 12 V DC, receiver only, .350 amps.; Standby 1.2 amps.; Transmit 5 amps. **Dimensions:** 8¼″ W x 10½″ L x 4½″ H

Assembled MWW-13, Radiotelephone, microphone, mounting bracket, ground wire, 2182 & 2638 KC crystals, FCC license pack, and instructions (requires licensed technician for final installation)... no money down, $16 mo., 14 lbs. **$164.95**
Assembled MWW-13S (Complete System) 19 lbs., no money down, $18 mo. **$189.95**
Extra transmitter and receiver crystals: (please specify 2 additional frequencies when ordering pre-tuned set) ..... ea. **$2.95**
MDP-93 Matching Antenna for above, 5 lbs....5 mo. **$34.95**
MDP-103 Swivel lay-down bracket for MDP-93, 1 lb. **$9.95**

New 70-watt RADIOTELEPHONE . . . extra power for extended cruises

MWW-23
$269.95

- Factory assembled and tested
- Sensitive 8-transistor receiver
- 5 transmit & receive channels
- FCC type accepted

Mariners everywhere will find the new Heath kit MWW-23 a faithful servant in every sense of the word! . . . providing shipboard broadcast radio entertainment, latest weather reports, emergency distress communications or just general communications to "keep-in-touch"! Its many advanced design features with powerful 70-watt transmitter and sensitive 8-transistor receiver bring you crisp, clear communications over an extended range for extra safety on long cruises. Fresh, modern styling in white, gray & black with blue accents, compliment marine decor for a very smart appearance. Simple controls with push-to-talk microphone afford the utmost in operating convenience. It can even be used as an 8-watt deck-hailer or PA amplifier on large craft. 2182 and 2638 kc crystals (ship-to-ship & distress channels) are furnished. Built-in heavy-duty vibrator power supply operates from 12v. DC source. FCC type accepted. Approved for "party boat" use.

SPECIFICATIONS—Frequency range: 2-3 mc. **Broadcast:** 550-1600 kc. **Receiver sensitivity:** (providing 10 DB S/N ratio or better). Marine channels; 2 microvolts. Broadcast; 20 microvolts. **Audio output:** 3 watts to internal speaker, 8 watts to PA "deckcall". **Transistor complement:** (1) T1363 Mixer; (1) T1364 Oscillator; (2) T1364, I.F.'s; (1) 2N1274 1st Audio; (1) 2N301 Driver; (2) 2N1147 Audio Output and Modulator; (5) diodes, noise limiter, squelch, detector and AVC overload. **Transmitter: RF input:** 70 watts. **RF output:** 35 W. min. **Transmitter tube complement:** (1) 6BA8 Oscillator and Buffer; (1) 12DQ6A Final Amplifier. **Power requirements:** 12 volts DC. Receiver only; 0.9 amp.; Standby: 2.1 amp.; Transmit: 13 amps. **Dimensions:** 7″ H x 10″ W x 13″ D.

Assembled MWW-23, 25 lbs., no money down, $25 mo. **$269.95**
MDP-13, 18′ Fiberglass Antenna for above. 12 lbs. **$59.95**

HAIL-R-HORN MEGAPHONE

MDP-133
$23.95

Ideal for skippers, coaches, foremen. Specially designed frequency response gives clear voice projection over wide distances. Push-pull 2-transistor power amp. 8-watts peak. Handy trigger switch. Housed in hi-impact plastic case. Operates on 6 standard "C" flashlight batteries (not included). Not a kit . . . ready to use. 3 lbs.

MDP-133 ..... **$23.95**

ELECTRO-VOICE DECK SPEAKER

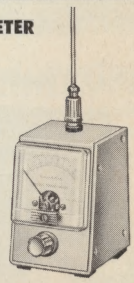
MDP-113
$15.88

Weatherproof horn projector in unbreakable plastic housing with rugged "any angle" swivel mount. Ideal for use with Radiotelephone for deck monitoring of receiver or hailing purposes. 8 ohm PM speaker. Response is 400-13,000 cps for crisp, clear signals. 7½ watt power rating. Moulded-in beige color. 3 lbs.

MDP-113...mftrs. list $27.00 ..... Net **$15.88**

RF POWER METER

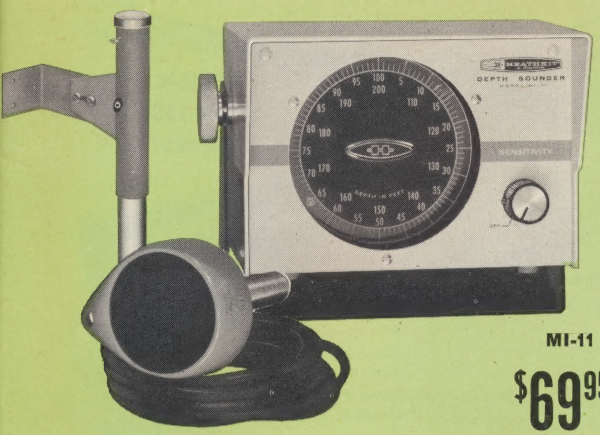
PM-2
$12.95



A handy accessory for boat owners with transmitting equipment aboard! Just place near transmitter antenna to sample RF radiation . . . shows relative power output on built-in meter. Sensitivity control allows use with any transmitter operating between 100 kc to 250 mc. A strong magnet in base holds it fast to any steel surface. 1 lb.

Kit PM-2 ..... **$12.95**

Highest Quality at Lowest Cost



Heathkit Transistor DEPTH SOUNDER . . . shows depth to 200 feet

- Dependable all-transistor circuit
- Built-in flashlight battery power supply
- Provision for external power supply
- Easy circuit board assembly

MI-11

$69.95

Assemble this highly accurate depth sounder in just one or two evenings of your spare time and prepare for one of the most exciting boating seasons ever! Locate schools of fish, the best fishing spots, explore uncharted waters, navigate unfamiliar lakes and streams with complete safety and many more! Accurate depth readings are shown on the large hooded dial calibrated in 1 ft. divisions from 0 to 200! A "gimbal" type mounting bracket allows tilting to desired angle for best reading . . . allows easy removal for safe-keeping. Internal battery supply may be kept in reserve for emergency by switching to external boat battery. (less batteries) A tremendous value. 8 lbs.

Kit MI-11...no money down, $7 mo....**$69.95**
Assembled MIW-11, $9 mo.....**$89.95**
MIA-11, Transom Transducer Mount. 2 lbs. **$8.95**

SPECIFICATIONS—Dial: 0-200 feet in one foot divisions. **Range:** 0-200 feet on hard bottons, 0-100 feet on soft bottoms. **Frequency:** 200 kc. **Sounding rate:** 1440 soundings per minute, or 24 per second. **Accuracy:** Within 5% of actual depth. **Depth indication:** Neon lamp flashing at 0 feet and again at indicated depth. **Transducer:** Barium titanate ceramic element encased in a waterproof housing with solid brass fittings; attached 15 foot length of 2 conductor shielded cable. May be mounted permanently to the hull or temporarily with a transom mount. **Controls:** Combined ON/OFF-Sensitivity. **Power supply:** 13.5 volts from nine self-contained size C flashlight cells, or external 12 volt battery. Flashlight cells are contained in three leakproof plastic housings. **Battery drain:** 50 milliamperes. **Average battery life:** 50 hours intermittent operation, 25 hours continuous operation. **Dimensions:** 7¼" W x 5¼" H x 7½" D.

3-Band Transistor RADIO DIRECTION FINDER . . . a welcome guide in any weather!

- Covers beacon/consolan, broadcast & marine telephone bands
- Powerful 10-transistor, 1-diode circuit
- Built-in flashlight battery power supply
- Prebuilt, aligned tested tuning unit for easy assembly

MR-21

$109.95

This high performance, all-transistor Radio Direction Finder will provide you with the latest weather reports, broadcast radio entertainment and serve as a faithful guide to a safe port in the event of bad weather or when out-of-sight of land. Its dependable built-in flashlight battery power supply provides extra safety in case of power failure. Position bearings are read on a large 6½" compass rose and its special "sense" antenna eliminates confusing double-null for true directions. Features built-in BFO for receiving consolan or CW signals. (less batteries) An unexcelled value for the safety-minded mariner! 14 lbs.

Kit MR-21. no money down, $11 mo. .**$109.95**
Assembled MRW-21, $14 mo.....**$149.95**

SPECIFICATIONS—Beacon band: 188 to 410 kc. **Broadcast band:** 535 to 1620 kc. **Marine band:** 1650 to 3450 kc. **Sensitivity for 6 db signal-to-noise ratio:** BC band, 40 uv/meter; Beacon band, 120 uv/meter; Marine band, 25 uv/meter. **Normal bearing accuracy:** ± 3°. **BFO:** 455 kc, switch-selected. **Speaker:** 4" x 6" weather proofed. **Power requirements:** 9 volts from 6 standard size "D" flashlight batteries. **Battery drain:** 35 ma @ 50 mw output level. **Battery life:** 500-1000 hours. **Dial light:** Spring-return switch operated. **Null and tuning indicator:** 0-1 ma meter. **Transistors:** (1) T1363, (2) 2N1108, (1) 2N1109, (1) 2N1110, (1) 2N1111, (1) R251, (2) R250, (1) 2N238, (1) diode. **Dimensions:** 9" x 9¾" x 6¾".

MARINE CONVERTER/CHARGER

MP-11

$44.95

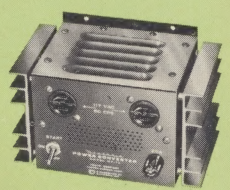
Permits dockside charging of boat's 6 or 12 volt batteries while simultaneously operating DC equipment (lights, pumps, radio equipment, etc.). 3 charging rates: Low, Med., High. 25 amps max., 15 amps cont. Input: 117v. AC, 50-60 cycle, 440 watts max. Less than 1% AC ripple allows unlimited use of transistorized equipment. Features four silicon rectifiers, fused primary and secondary circuits, metered output. 25 lbs.

Kit MP-11...$5 mo. **$44.95**
Assembled MPW-11,$59.95

MARINE POWER INVERTER

MP-10

$29.95



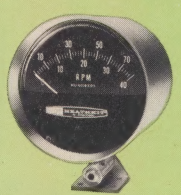
Converts 6 or 12v. battery power to 117v. AC. Useful aboard boats & automobiles where standard household voltage is desired. Rates at 175 watts continuous, 240 watts maximum. Two AC outlets and on-off switch provided. Features rugged power transistors cooled by efficient "heat-sinks" for long life. Fused for added protection. 8 lbs.

Kit MP-10...$5 mo...**$29.95**
Assembled MPW-10,$39.95

ELECTRONIC TACHOMETER

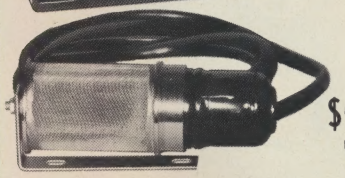
MI-31A

$24.95



Accurate all-transistor circuit! Works with all inboard & outboard engines except diesels. (1-6 cyl. 2-cycle or 1-16 cyl. 4-cycle). Features switch-selection of two ranges, 0-4000 and 0-8000 rpm. Use with positive or negative ground systems. Lighted dial. Simple to assemble. Ball & socket mount for easy installation. 3 lbs.

Kit MI-31A, $5 mo...**$24.95**



MI-41

$39.95

New Heathkit FUEL VAPOR DETECTOR . . . protects against fire and explosion danger . . . a safety "must" for any powered craft!

- Detects combustible gas fumes
- "Safe-dangerous-explosive" meter scale
- Provision for connecting external alarm device
- Transistorized for dependability—self-testing
- Superior performance at lower cost

An indispensable item for any gasoline-powered boat, the new Heathkit fuel vapor detector warns against dangerous buildup of flammable fumes in enclosed engine compartments. A "Safe-Dangerous-Explosive" meter scale shows whether any fumes are present, before motor is started, the most critical period of explosion danger. Provision is made for connection of an external alarm device such as buzzer or bell and can also be utilized to automatically operate a ventilation blower to clear fumes. Completely reliable the MI-41 features a dependable transistorized circuit that is insensitive to drafts, temperature or voltage variations and the built-in self-tester guarantees proper operation at all times. The "sensing" element cleans itself electrically, assuring dependability and long life. Requires 12v. DC, pos. or neg. grnd. Easy to assemble & install. 4 lbs.

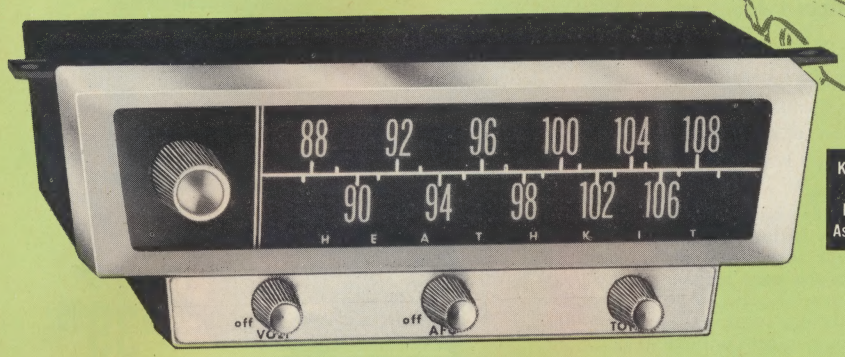
Kit MI-41...no money down, $5 mo.....**$39.95**

SPECIFICATIONS—Voltage: 12 V DC. **Current:** 1.0 amp. **Panel size:** 5" x 3-7/16". **Depth:** 3¾". **Detector head size:** 1½" round x 2½" long. **Length of interconnecting cable supplied:** 15'. **Audible alarm capability:** Yes. **Meter indicator:** Yes. **Color:** Marine White & Black. **Material:** Aluminum. **Temp. range:** —20° C to + 80° C.

ORDER NOW! PAY LATER

With Heath's new credit terms you can order the kits you want now! No money down . . . up to 18 months to pay on any purchase of $25.00 to $600.00. Enjoy the pleasure of building and having your Heathkit while you pay for it in easy monthly installments.

Money-Saving Accessories



Kit Form or Factory Assembled

GR-41 $64.95

New Heathkit High Fidelity FM AUTO RADIO . . . superb FM entertainment for your car at lowest cost. . . . only $64.95

• 10 transistor circuit • 10-watt push-pull output • Prebuilt, aligned FM tuning unit • Automatic frequency control • Separate tuner & amplifier for easy installation • Easy circuit board assembly

This handsome Heathkit FM Auto Radio brings you matchless FM entertainment at less than half the cost of comparable units on the market today! Its efficient, cool-running 10-transistor circuit covers the entire FM band (88 to 108 mc) with better than 1.5 microvolt sensitivity for tremendous station pulling power! Deluxe circuit features include an RF amplifier, separate oscillator and mixer, 3 IF stages, 2 audio driver stages and push-pull output wide-band amplifiers for full fidelity response. Tuner and amplifier are separate for optimum installation ease. Factory aligned coils & tuning unit, circuit board construction and complete instructions make assembly fun and easy. Also featured is built-in circuit breaker protection . . . no fuses to replace ever! An antenna coupling cable and speaker control switch are included to use existing AM auto antenna & speaker (use accessories below if no AM radio is installed). Beautifully styled in black with chrome bezel and knobs; lighted dial scale. Designed for 12 volt negative ground systems only. 7 lbs.

Kit GR-41...no money down, $7 mo. **$64.95**
Assembled GRW-41...no money down, $10 mo. **$94.95**
GRA-41-1: FM auto antenna with swivel mount, 15′ cable. 2 lbs. **$3.95**
GRA-41-2: 6″ x 9″ oval speaker & grille for rear deck mount. 2 lbs. **$4.95**
GDP-192: RF NOISE SUPPRESSOR KIT: Easily installed on any engine where ignition interference is a problem. Complete instructions included. 1 lbs. **$16.95**

SPECIFICATIONS—Tuning range: 88 to 108 mc. **Quieting sensitivity:** 1.5 uv for 20 db signal to noise quieting. **I. F. frequency:** 10.7 mc. **I. F. rejection:** 70 db. **Image rejection:** 30 db. **Total bandwidth:** 340 kc. (6 db down). **Audio power response:** ±1 db (60-12,000 cps). **Harmonic distortion:** Less than 1% @1 kc; Less than 3% 60-12 kc. **Power output:** 10 watts RMS, 20 watts peak. **Circuit:** 10 transistors. RF amplifier, oscillator, mixer, 3 IF stages, 2 audio driver stages, push-pull output. **Controls:** Tuning; on/off, Volume; AFC defeat; Tone control. **Dimensions:** (RF unit) 2⅞″ H x 7⅝″ W x 4¾″ D, (power amplifier) 2¼″ H x 6⅜″ W x 4⅞″ D. **Power requirements:** 2 amperes @12 v. DC at full power output.

Heathkit Electronic IGNITION ANALYZER . . . a real time saver!

• Shows ignition system faults without removing a single part! • Simple to use . . . manual shows what to look for in trouble-shooting • Ideal for professional mechanics and hobbyists

Anyone can become an ignition system specialist with this amazing instrument! Ignition system faults are swiftly analyzed through tell-tale patterns on the picture tube screen . . . while the engine is running and without removing a single part! Defects such as shorted spark plugs, bad points, worn distributor parts, incorrect dwell time, coil & condenser problems and many more are swiftly located allowing perfect tune-ups every time! The complete informative operational manual shows what to look for in the patterns displayed —amply illustrated with detailed photos throughout! 14 lbs.

Kit Form or Factory Assembled

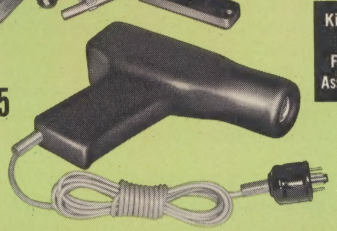
IO-20 $89.95

Kit IO-20...no money down, $9 mo. **$89.95**
Assembled IOW-20...no money dn., $16 mo. ... **$169.95**

SPECIFICATIONS—RPM range: 400-5000 rpm. **Displays:** Secondary, Primary, Parade, Super-imposed. **Screen size:** 4¾″ diameter. **Dwell measurement:** 4, 6 & 8 cylinder calibration on face plate. **Pattern height:** Secondary circuit, approx. 1″; Primary circuit, 6 volt system ¾″, 12 volt system 1″. **Vertical expand ratio:** 2 to 1. **Horizontal expand ratio:** 10 to 1. **Cable length:** 12′ pickup clamp, 2′ ground, primary and secondary clips. **Power requirements:** 105-125 V, 50/60 cycles AC, 30 watts. **Dimensions:** 8″ H x 9½″ W x 16″ D.

Heathkit TIMING LIGHT

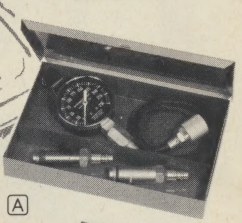
A handy accessory for the IO-20 above. Permits making timing checks of engine while checking ignition system. Intense white light shows timing marks even in brightly lighted areas. Speed range: 0-1250 flashes per minute (0-2500 rpm for 4-cycle engines). Hard rubber pistol-grip case (6″ H x 7½″ L x 2″ W).



ID-11 $14.95

Kit Form or Factory Assembled

Kit ID-11...2 lbs. **$14.95**
Assembled IDW-11...2 lbs. **$19.95**



SPECIAL AUTO-TEST VALUES!

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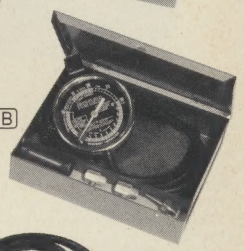

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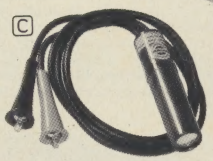


Ⓒ

Weidenhoff Model 44 COMPRESSION GAUGE—Only $11.95. The preferred compression tester; has flexible hose to permit use where spark plug opening is obstructed. Shows sticky valves, gasket leakage, improper valve seating, piston or ring blow-by. 2″ black & white dial. Complete with adapters, hose, and sturdy metal case. **GDP-33,** 4 lbs., **$13.50** list, **Net $11.95**

Ⓑ

Weidenhoff Model 46 VACUUM & FUEL PUMP GAUGE—Only $14.39. Handiest tester ever! Vacuum tests general engine condition, valves, valve springs & guides, muffler condition, valve timing, throttle valve, air leaks in manifold, fuel pump condition, gas tank & line leaks, and carburetor adjustments. 3″ multi-color dial. Complete with adapters, hose, and metal case.

GDP-23, 4 lbs., **$16.00** list, **Net $14.39**

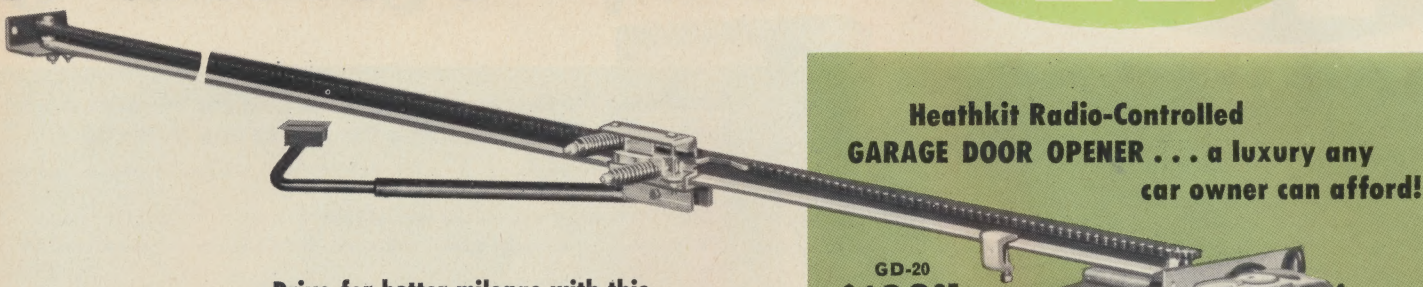
Ⓒ

Weidenhoff Model 201 TIMING LIGHT —Only $7.95. Sturdily built, plastic encased timing light of recognized quality. Simple to use, just connect between no. 1 spark plug and its distributor lead (can also be placed in parallel with plug). Neon tube; glass lens; clip leads with rubber "sleeves".

GDP-13, 2 lbs., **$8.75** list, **Net $7.95**

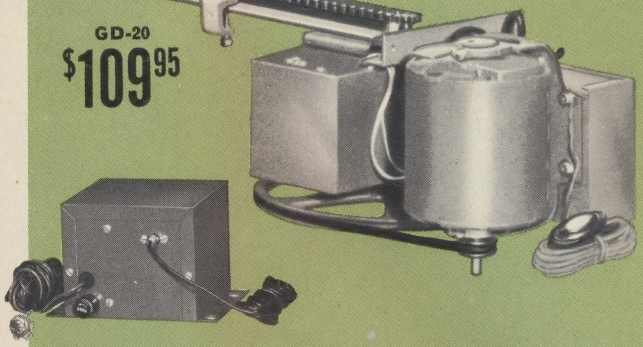
for Home & Auto

HEATHKIT®



Heathkit Radio-Controlled GARAGE DOOR OPENER . . . a luxury any car owner can afford!

GD-20
$109.95



- **Opens, closes & lights your garage automatically**
- **Operates overhead track and most jamb & pivot doors up to 8' high**
- **Fool-proof safety device disengages door when obstructed**
- **Easy to build & install with complete instructions supplied**

Once you have enjoyed the convenience of this time and labor saving device, you'll wonder why you ever did without it! No longer will you have to leave the comfort of your car in rain, snow, or sleet to open the garage door. Just the touch of a button on your car's dashboard as you pull into your driveway opens the door automatically and turns on the light . . . another touch of the button after you're inside and the door closes! A time delay on the mechanism-operated light keeps the light "on" for several minutes after the door closes, giving you ample time to enter the house or switch on the main lights, then automatically turns itself off. This feature can also be used to control driveway, patio or breezeway lights for complete safety at night. An extra switch is included to allow operation of the door from inside the house or garage. Ordinary bell wire may be used to add additional switches since it operates from a safe 12 volt line. Kit includes all parts and instructions for easy assembly and installation. Requires just 2½" clearance above highest point of door travel. Mechanism may be purchased separately for operation from house or garage or complete with transmitter and receiver for radio-controlled operation. A unique safety device on the mechanism releases the door automatically should it meet any obstruction. Release pressure is adjustable for both "up" and "down" directions to meet the requirements of any door. Order your Heathkit radio-controlled garage door opener today . . . and enjoy its many advantages at lowest cost!

Kit GD-20: Mechanism, Transmitter & Receiver. 67 lbs. . . . no money down, $11 mo. **$109.95**
Kit GDA-20-1: Transmitter only. 4 lbs. . . . no money down, $5 mo. **$24.95**
KIT GDA-20-2: Receiver only. 3 lbs. **$16.95**
Kit GDA-20-3: Mechanism only. 58 lbs. . . . no money down, $7 mo. **$69.95**

TRANSMITTER SPECIFICATIONS—6 or 12 volt DC operation. 5 watts max. (FCC requirements) to final. 3 modulation frequencies approx. 2KC, 2.9KC & 3.7KC. Fused. 4⅝" wide x 6" long x 4" high. 6AU8 & 12BH7, 27.255MC crystal controlled.

RECEIVER SPECIFICATIONS—117 V.A.C. 4¾" wide x 6" long x 4" high. 6BH6 & 6AU6, 10 watts idle, 12 watts with signal. 27.255MC. 3 audio filter frequencies approx. 2KC, 2.9KC & 3.7KC adjustable to match Xmitter. Fused.

MECHANISM SPECIFICATIONS—126" length x 8⅝" high x 13" wide. 100 lbs. max. operating force. Operate doors up to 8' high. 117 V.A.C. ¼ H.P. motor. Fused.

USE HEATH'S EASY TIME PAY!

No money down . . . up to 18 months to pay! Order the kits you need now . . . it's easy and convenient. See order blank for complete details.

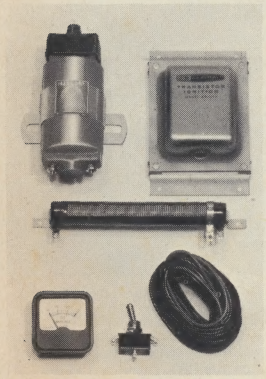
Drive for better mileage with this New Electronic MILES-PER-GALLON METER

- **Instantly shows how many mpg. your car is delivering**
- **Computes mpg. 1000 times each mile**
- **Learn how smooth acceleration helps**
- **Find most economical speed**

Drive to suit the condition of your car, terrain, temperature, weather, etc. You'll find the Fuel Computer pays for itself as you learn the economies of smooth acceleration, best cruising speed, best brand of gas & oil, etc. Lighted indicator mounts on dash or steering column, reads like a speedometer in miles per gallon. Fuel transmitter installs between carburetor & fuel pump; miles transmitter inserts between speedometer & cable; coordinator mounts under dash. Advise make and model of car. 2 lbs.

Model GDP-222, no money down, $6 mo. . . **$59.50**

Put New "Life" into your car with this New Heathkit TRANSISTOR IGNITION SYSTEM kit



- **Voltage protected transistors**
- **Adjustable for optimum current**

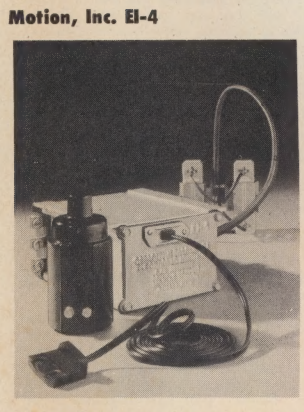
Those interested in the all-American hobby of tinkering with a car will find this new transistor ignition kit a fascinating experiment. Designed for 12 volt negative-ground ignition systems, this kit replaces your present coil with a new special Mallory coil and a transistor circuit to produce a much "hotter" spark. Leading automotive magazine editors claim the results are astonishing . . . better mileage, smoother idling and acceleration, easier starting, and longer life for the engine and ignition system parts. Kit is complete with all necessary parts; easy to build, simple to adjust (meter and adjustable ballast resistor included for optimum current setting), easy to install. For the complete story see the August '61 issue of Science & Mechanics magazine. 4 lbs.

Kit GD-212, no money down, $5 mo. **$34.95**

Specifications: Two 2N1546 transistors: two 56v., 1w. Zener diodes; adjustable 1 ohm, 100 watt ballast resistor; Mallory F-12T coil; current meter. **Power requirements:** 12 volt negative ground system only. **Finish:** bright zinc. **Dimensions:** chassis 1¾" H x 3¾" W x 5-13/16" L.

New Capacitive Discharge ELECTRONIC IGNITION SYSTEM . . . a new concept in ignition

Motion, Inc. EI-4



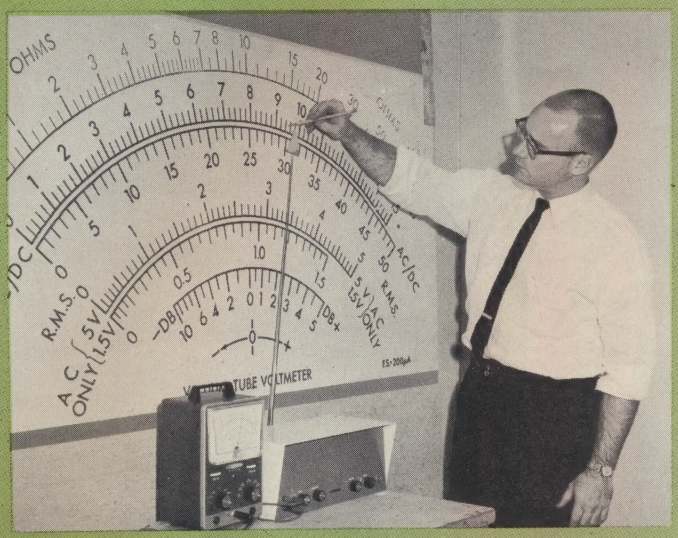
- **Thoroughly lab and field tested**
- **Compatible with most gasoline engines**
- **Eliminates breaker point and plug failure**
- **Easy to install—not a kit**

No other system like it anywhere! Requires no modification of standard ignition parts on engine! The Motion Inc. EI-4 system operates on a high energy capacitive discharge principle which reaches firing potential 35 times faster than conventional or transistorized systems . . . limits current to breaker points, preventing pitting and erosion . . . provides a higher voltage spark to eliminate misfire at high engine speeds . . . maintains top mileage performance and increases ignition system life manyfold. The immediate effects noticed will be fast, sure starting in all kinds of weather, smooth, uninterrupted power flow through entire rpm range, increased acceleration performance, substantial savings in fuel consumption and virtual elimination of maintenance. Anyone capable of doing a simple tune-up can install the rugged, fool-proof electronic circuitry in about an hour. A lasting investment for improved performance never before possible in the finest tuned sports car, truck, taxi, the family car or stationary engine! 8 lbs.

GDP-763-N (neg. gnd.) . . . no money down, $12 mo. **$125.00**
GDP-763-P (pos. gnd.) . . . no money down, $12 mo. **$125.00**

HEATHKIT®

Educational Kits for All



Introducing the First in a New Series of Heathkit Educational Equipment . . . The CLASSROOM DEMONSTRATION METER EV-2

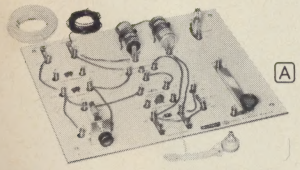
- **Demonstrates phenomena in electronics, chemistry, and physics by duplicating instrument meter readings**
- **Big 3 x 4 foot scale is visible from 30 feet or more**
- **Mechanism with 3-tube circuit and synchronous motor is available in kit or wired form**
- **Construction manual describes popular classroom demonstrations**

Educators everywhere, conducting classes on all levels, will want to put this unique Heathkit to work in their classrooms. For electronic applications, connect its high impedance input in parallel with the milliampere or microampere movement of any VTVM, V-O-M, or in-circuit meter. Thermistor or coil-magnet inputs make chemistry and physics experiments involving temperature or magnetic lines of force more vivid. The driving mechanism is enclosed in a 15" x 6" x 7" green and white cabinet. The front panel features Zero Adjustment, Coarse and Fine Calibration, Damping, On-Standby-Off switch, Input Terminals and Pilot Light. The unit is 110 VAC, 60 cycle, transformer operated. The 3 x 4 foot scale supplied matches the Heathkit IM-11 or V-7A VTVM. Pointer length is adjustable. Extra, blank scales may be calibrated for any purpose. Available under Title III of the National Defense Education Act Purchase Guide No. 2125. Priced to fit any budget, the EV-2 will be available soon . . . watch for it!

A New Concept in Electronics Education . . . The Malmstadt-Enke INSTRUMENTATION LABORATORY—A Coordinated System of Equipment and Textbook

Especially engineered by Heathkit in conjunction with the new textbook, "Electronics For Scientists," authored by Dr. Malmstadt of the University of Illinois and Dr. Enke of Princeton University, this new system was originated to teach the principles, design, and use of electronic instruments in scientific applications. The book is written expressly for science students, chemists, physicists, engineers, medical researchers, biologists, and research workers who need to gain a working knowledge of electronic devices and circuits. The components include four Universal Experiment Chassis & Parts, Universal Power Supply, Servo-Recorder, Operational Amplifier, Voltage Reference Source, Transistorized Power Supply, Laboratory Meter, and factory wired Heathkit Test Instruments. The components and instruments can be purchased in related groups, individually, or as a complete instrumentation laboratory, for teaching or industrial purposes. Write for free six-page descriptive brochure.

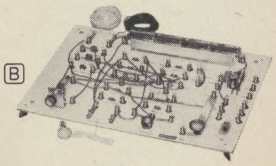
Heathkit Science Series—Fun to Build Kits—Designed for the Youngster Interested in Electronics



A ELECTRONIC WORKSHOP "6"

Contains all parts, tools, instructions, and operating principles for six different and exciting experiments. Solderless connectors allow simple circuit changes. Set builds a code flasher, crystal radio, 2 transistor radios and wireless voice and code transmitters. Safe, battery operated. Less battery. 3 lbs.

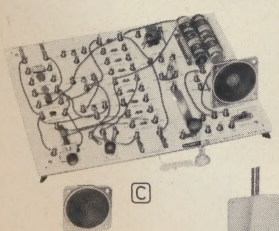
Kit SK-30 ..... **Only $8.95**



B ELECTRONIC WORKSHOP "11"

11 different experiments designed to entertain while they teach! 3 different transistor radios, code practice flasher, wireless voice and code transmitters, electronic timer, burglar alarm, electronic flasher, audio signal injector and intercom. No soldering necessary. Battery powered. Less battery.3 lbs.

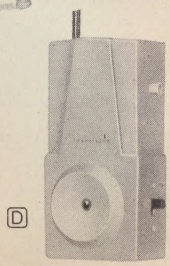
Kit SK-40 ..... **Only $12.95**



C ELECTRONIC WORKSHOP "19"

Largest of the workshops! Contains all materials and instructions to build 19 different circuits with simple solderless spring-type connectors. Circuits include a code flasher, PA system, 5 transistor radios, electronic timer, burglar alarm, electric eye, TV silencer, and many more! Safe, economical batteries furnish all power required. Less battery. 4 lbs.

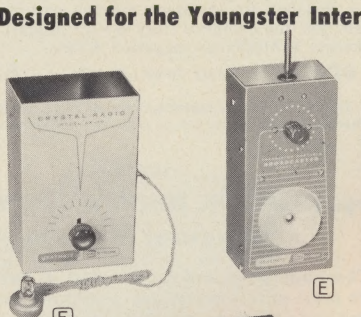
Kit SK-50 ..... **Only $19.95**



D TRANSISTOR "WALKIE-TALKIE" KIT

A real two-way radio! Operates just like those used by our armed forces. Battery powered for complete portability. Communicates with similar units up to a quarter mile away. Easy to assemble, just slip the factory wired electronics into the case and connect the antenna. To use, just switch the unit on, push the button to talk, release to listen. Less battery. 2 lbs.

Kit SK-22 ..... **Only $17.95**



E TRANSISTOR PORTABLE BROADCASTER

Transmit your voice to any nearby AM radio without wires for hours of fun playing "announcer", "Disc-Jockey", etc. Complete check-by-step assembly instructions and basic operational theory included to explain how it functions. Battery powered. Kit includes all-metal case, solderless connectors, all components and tools. Less battery. 2 lbs.

Kit SK-10 ..... **Only $9.95**

F CRYSTAL RADIO KIT

Any youngster can have his own "private radio" with this easy to assemble kit. No batteries or external power required! Circuit uses fixed diode detector and permeability tuned earphones, 50' antenna wire, solderless connectors, instructions and radio principles. Two-tone metal case. 2 lbs.

Kit SK-70 ..... **Only $3.95**

G TRANSISTOR RADIO KIT

Here is a real transistor radio that any youngster can build! Circuit board assembly with solderless connectors make it a simple project easily accomplished in just a few hours. All parts, tools, cabinet, and earphone included. Battery powered for safety. Operating principles show how it works. Less battery. 2 lbs.

Kit SK-60 ..... **Only $7.50**

H TRANSISTOR INTERCOM KIT

A complete 2-way intercom! Lets you talk from room to room or house to house! Loads of fun! Operating principles teach youngsters basics of wired communications systems. All-transistor circuit operates on safe, flashlight batteries. "Master" unit has listen-talk slide switch, volume control and on/off switch. All parts, tools, solderless connectors, and instructions included. Less batteries. 3 lbs.

Kit SK-20 ..... **Only $13.95**

Ages, Many Purposes

"How To Understand And Use Your Vacuum Tube Voltmeter" . . . Heathkit Applications Course EF-1

• Kit-Textbook project • Basic theory in everyday language • Applies to all VTVM's • Buy with Heathkit VTVM and save

Learn the theory, advantages and applications of a VTVM. This EF-1 Course can be used for classroom work or independent home study, and will prove of value either as a starting point for the beginner or as a "refresher" for the professional. The text covers the basics of electronics and the theory of VTVM's written in a "learn by doing" method which greatly reinforces understanding. Accompanying the text is a power supply kit which is used in experiments detailed in the book. It delivers 120 volts, AC or DC, at 20 ma. plus 6.3 volts at 1.5 amps. Learn more about VTVM's, order your EF-1 Course today.

Kit EF-1 (for VTVM owners) 3 lbs. **$8.95**

Kit EF-1-4, includes EF-1 above and IM-13 VTVM p. 36, 9 lbs., no money dn., $5 mo. **$39.95**

Kit EF-1-3, includes EF-1 above and IM-11 VTVM p. 36, 6 lbs., no money dn., $5 mo. **$32.50**

EF-1-4
$39.95

EF-2-3
$57.95

Learn Radio Theory Easily, Quickly with this Heathkit Two-Part Basic Radio Course

• Kit-Textbook projects • Simplified basic theory written in everyday language • Build a two-band receiver as you learn

Designed to teach both adults and youngsters, the Heathkit two-part Basic Radio course provides a sound basis of understanding radio theory. Written in the "learn by doing" concept, the texts do a thorough job of teaching while the student builds a useful receiver.

Suitable for classroom or home study, this two-part course covers a variety of topics. Basic Radio—Part I (EK-2A) combines the use of components and theory: What Is A Radio Signal, What Is A Detector, What Is A Tuned Circuit, How Do Diode Vacuum Tubes Work, What Does The Grid In A Vacuum Tube Do, etc., for a total of nine lessons. Basic Radio—Part II (EK-2B) continues with: What Is A Transformer, How A Power Supply Works, What Does The RF Section Of A Receiver Do, What Is An Oscillator And How Does It Work, What Is A Converter, What Does The Audio Section Of The Receiver Do, What Does Alignment Mean, etc., for a total of ten lessons.

As the student begins Basic Radio—Part I, he simultaneously assembles a crystal receiver. From chapter to chapter, as he progresses, this elementary receiver is improved upon by the addition of tuned circuits and tubes until the final product is a regenerative receiver capable of pulling in stations hundreds of miles away.

With the additional parts contained in Basic Radio—Part II, further refinements are made upon the receiver until at the end of the course, a two-band superheterodyne is completed. It covers 550kc to 1600kc (standard broadcast) and 3mc to 10mc (marine, amateur radio, and shortwave). An accessory cabinet is available to make the receiver suitable for use in any room in the home.

Order your Heathkit Basic Radio Course now.

Basic Radio Part I (Kit EK-2A), 7 lbs.... **$19.95**

Basic Radio Part II (Kit EK-2B), 4 lbs..... **$19.95**

Accessory Cabinet AK-8, for completed receiver, 3 lbs..... **$3.95**

EK-1
$19.95

EK-2A
$19.95

EK-2B
$19.95

EK-3
$16.95

"How To Understand And Use Your Oscilloscope" . . . Heathkit Applications Course EF-2

• Kit-Textbook project • Basic theory in everyday language • Applies to all oscilloscopes • Buy with Heathkit oscilloscope and save

Newest in the Heathkit Technical Applications Series, the EF-2 is designed to present theory and application of oscilloscopes. The course can be used in both classroom and home study situations. The big 169 page text is written in everyday language using the "learn by doing" concept which has made Heathkit Educational sets so popular with beginners. Those already familiar with oscilloscopes will find its approach fresh, new, and its glossary and bibliography a handy reference. The experimental chassis and parts included help illustrate the text; solderless spring-clips make connections easy, once basic wiring is done. Get more from your oscilloscope with the EF-2.

Kit EF-2, 4 lbs..... **$9.95**

Kit EF-2-3: Includes EF-2 above and IO-21 Oscilloscope, p. 41, 17 lbs., $6 mo..... **$57.95**

Kit EF-2-4: Includes EF-2 above and IO-12 Oscilloscope, p. 41, 26 lbs., $9 mo..... **$84.95**

Learn Basic Electronic Theory with the Heathkit Basic Electricity Course EK-1

• Kit-Textbook project • Basic theory in everyday language • Build a DC meter as you learn

Designed by a science educator for students of the junior high level or above for classroom or home study use, the Heathkit EK-1 teaches the basic theory of voltage, current, resistance, series and parallel DC circuits, meter circuits, and Ohm's law. Recommended as a starting point for the Heathkit Educational Kits, it provides the student with a basic working knowledge and vocabulary in an interesting "learn by doing" manner. During the course, the student performs several basic experiments with dry-cell batteries, and then begins assembly of an actual instrument which is used to verify theorems in the text. The completed instrument is a handy DC volt-ohm-milliammeter which has dozens of applications in home and hobby use. Get started now in this exciting, informative series of "learn by doing" educational kits with the EK-1.

Basic Electricity (Kit EK-1), 4 lbs..... **$19.95**

Explore the Miracle of Transistors with this Heathkit Basic Transistor Course EK-3

• Kit-Textbook project • Basic theory in everyday language—no complicated mathematics • Build a handy two-station intercom as you learn

Learn about the wonder of the age, the "how" and "why" of transistors, their associated circuitry and applications. This Heathkit Educational Course EK-3 uses the "learn by doing" technique to vividly teach basic theory while you conduct interesting experiments. Suitable for classroom or home study, the EK-3 includes a detailed textbook and all the parts needed for assembly of a two-transistor radio, wireless broadcaster, audio amplifier, and audio test oscillator. The student wires these on a special experimental chassis. Also included are the necessary parts to perform the final experiment, a useful two-transistor intercom system consisting of "master" and "remote" station. While designed primarily for use by beginners (both adults and youngsters), service technicians also will find the EK-3 useful in the understanding, servicing and trouble-shooting of transistor circuitry.

Basic Transistors (Kit EK-3), 4 lbs..... **$16.95**

Heathkit's New ELECTRONIC ORGAN
Wins Raves from Everyone who has Built It!
High Quality . . . Lowest Cost . . . Easy to Build

• Ten true organ voices • 13-note heel & toe bass pedals • Variable bass pedal volume control • Expression pedal • Keyboard balance control • Vibrato on-off switch • Vibrato intensity switch • Two correctly positioned overhanging 37-note keyboards • 20-watt peak power amplifier & speaker • Transistorized tone generators • Beautiful hand-rubbed walnut cabinet

"Tonal quality exceeds expectations" . . . "creates a beautiful appearance" . . . "a beautiful job of making a kit" . . . "assembly manual is a masterpiece" . . . "far easier to build than I expected" . . . "a flawless job of simplification" . . . "functions perfectly" . . . these are but a few of the enthusiastic praises the new Heathkit organ is winning from kit builders everywhere. This Heathkit version of the Thomas Model A Transistor Organ makes it possible for you to enjoy the beauty of your own electronic organ and save hundreds of dollars! Everything is included, everything is explained. Parts are all genuine factory fabricated by Thomas, and the factory assembled cabinet is ready for installation of the various component modules as you complete them. As with any Heathkit, no electronic experience is needed . . . in fact, this particular Heathkit has probably been built by more inexperienced people than by others. Transistorized plug-in tone generators, the heart of the organ, assure clear, undistorted tone, long life, and virtual elimination of service problems. Its many voices include Trombone, Reed, Flute, Oboe, Cornet, Violin, Saxophone, Horn, Viola, and Diapason to produce endless combinations of sound. Order your Heathkit organ now, it's a remarkable value. You can build it . . . and the family will cherish it.

Kit GD-232, Organ, 160 lbs., no money dn., $23 mo. **$349.95**
GDA-232-1, Matching Walnut Bench, 16 lbs., $5 mo. **$24.95**

Self-Teacher Recorded Lessons—48 Easy Steps To Fun!
48 lesson course on four 12" LP records, with music book, bound in white leatherette album. Provides a firm basis of music knowledge, not just note playing by number or color. 5 lbs.
GDA-232-2, Recorded Lessons, List $50 ..... **only $19.95**

DEMONSTRATION RECORD
Hear it for yourself! . . . its beautiful voices, tone, and expression. Enclose 50c for handling & mailing.
GDA-232-3, 7"-33⅓ rpm disc.

GD-232
$349.95
(less bench)

GR-22
$169.95 (less wall mask)

You Can't Buy a Better TV Set at Any Price! High Definition 23" Picture . . . High Fidelity Sound . . . Designed for wall mounting, custom, or Heathkit Cabinets . . . and it sells for as low as $169.95

Compare these superior features: • 17 tube, 5 diode circuit with optional UHF gives 30 tube performance • High definition 23" tube with anti-glare bonded safety glass • Spark-gap socket for picture tube protection • Deluxe turret-type Standard-Kollsman Nuvistor tuner • 20,000 volt picture power • Transformer power supply • Prebuilt hi-voltage section • Four prebuilt subassemblies for quick completion with factory-built performance • Easy circuit board construction with 2 wiring harnesses • Line thermistor for long tube life • Circuit breaker and B+ protection • Gated AGC and Noise Canceller for peak reception anywhere • Cathode follower output for hi-fi system • Sound-power output for speaker attachment • Wide-band, high-gain, 3-stage prealigned IF strip with five interference traps • DC restorer • Front panel controls for channel selection, fine tuning, UHF, contrast, volume/on-off, brightness, vertical and horizontal hold, AGC, vertical height and linearity • Rear controls for sync/noise, focus and width • Finest parts • Tubes alone list at over $135 • Build it in about 12 hours.

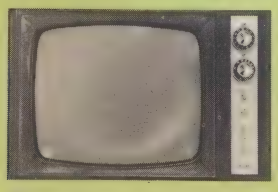
Kit GR-22, chassis & tubes, 70 lbs., no money dn., $16 mo. **$169.95**

SPECIFICATIONS—Picture size: 23" over-all diagonal, approximately 282 sq. in. **Deflection:** Magnetic, 90°. **Focus:** Electrostatic. **Antenna input impedance:** 300 ohm balanced. **Tuning range:** VHF TV Channels 2-13, (optional UHF Channels 14-82). **Picture IF carrier frequency:** 45.75 mc. **Sound IF carrier frequency:** 41.25 mc. **Sound IF:** 4.5 mc. **Video response:** to 3.2 mc. **Tube complement:** 6DS4 Nuvistor RF Amp: 6CG8A Osc. & converter: 6DZ4 (optional) UHF osc.: 6BZ6 1st IF: 6GM6 2nd IF: 6EW6 3rd IF: 6HF8 Video amp & sound IF: 6GX6 Sound detector & 1st audio: 6GW8 sound output & cathode follower: 6HS8 sync & AGC: 6EW7 vertical osc. & output: 6FQ7 horizontal osc: 6GW6 horizontal output: 6CQ4 damper: 1B3/1G3 high volt. rect.: 5U4GB low volt. rect.: 23BWP4 picture tube. **Diodes:** (2) IN295 video detector & DC restorer: Dual selenium horizontal AFC: IN82A-UHF Mixer. **Sound cathode follower:** Output impedance—3k. Frequency response: ±1 db 50-15,000 cps; Harmonic distortion: less than 1%. Output Voltage 2V. **Audio output:** Output impedance, 8 ohms. Output Power, 2 Watts; Frequency response: ±2 db 50-15,000 cps. Harmonic distortion: less than 3%. **Power requirements:** 105 V to 125 V, 60 cycles AC, 210 watts. **Size reqd. for mounting:** 19" H x 29⅛" W x 17" D.

Deluxe Heathkit TV Cabinets
- **Matches Heathkit Hi-Fi Cabinets**
- **Deluxe hand-rubbed walnut or white hardwood**

To complete your Heathkit home entertainment center, add this new Television cabinet . . . it matches Heathkit Hi-Fi cabinets perfectly. Comes ready for installation; includes picture tube mask, chassis mounting board, and 6 x 9 inch extended range hi-fi speaker. Measures: 36" W x 32⅜" H x 20½" D.

GRA-22-1, Walnut TV cabinet, 60 lbs., no money dn., $9 mo. **$89.95**
GRA-22-4, Unfinished cabinet, 60 lbs., no money dn., $8 mo. **$79.95**
GR-52, TV set & walnut cab., 130 lbs., no money dn., $23 mo. **Save $10** **$249.90**
GR-82, TV set & unfinished cab., 130 lbs., no money dn., $22 mo. **Save $10** **$239.90**



Custom TV Wall Mount Mask

Unique, handsome all-wood mask and ¾" picture tube mounting board in white birch, ready for the finish of your choice. Cut and drilled to accept chassis and tube. Dimensions: 20⅜" H x 30⅜" W x 1-11/16" D.

GRA-22-2, TV Wall Mount, 13 lbs., $5 mo. **$25.95**
GR-62, TV Set & Wall Mount, 83 lbs., **Save $6** . . . no money dn., $18 mo. **$189.90**

Optional UHF Tuner

Add it at any time for UHF coverage. Continuous tuning type Standard-Kollsman UHF tuner, designed to match the VHF tuner in the set, covers channels 14-82. Mounts inside chassis.

Assembled GRA-22-3, 3 lbs., $5 mo. **$27.95**

Less With Heathkit

HEATHKIT

A Matched Pair for FM Stereo Reception At Low Cost

GRA-21-1
$49.95

GR-21
$59.95

• Beautiful walnut FM table radio • Matching FM stereo converter • 88-108 mc coverage • Automatic frequency control • Tone control • Extended range 6″ x 9″ speakers • Easy to build with preassembled and aligned tuning unit

A sensational value, this handsome combination is designed to bring you top quality Stereo FM in a small package and at lower cost. The FM table radio may be used separately for monophonic FM . . . it includes a lighted dial, magic "eye" tuning, built-in antenna, and safe transformer operation. The matching FM Stereo Converter features identical audio circuitry to assure matched response plus transformer operation for safety. Both units have big 6″ x 9″ dual-cone PM speakers for true high fidelity reproduction and matched ⅜″ walnut cabinets measuring 15″ L x 8″ H x 6″ D. The speaker grilles are a unique offset "relief" design to complement any room decor. Complete controls are featured for volume, AFC defeat, mode of operation, tuning, and tone. For economical FM Stereo, order both kits today.

Kit GR-21, FM Table Radio, 18 lbs. . . . no money dn., $6 mo. . . **$59.95**
Kit GRA-21-1, FM Stereo Converter, 17 lbs. . . . no money dn., $5 mo. **$49.95**

GD-31
$129.95

Kit Form or Factory Assembled

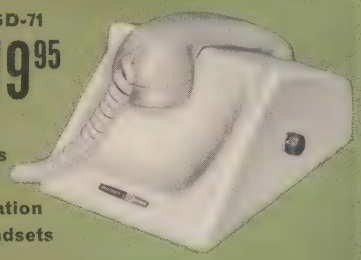
Low Cost, Space-Saving Heathkit STEREO CONSOLE

• Less than three feet long • Less than $150 even in factory assembled form • Six speakers, two 12″ woofers, two 8″ mid-range, and two 5″ tweeters • Stereo amplifier with 60-15,000 cps response • 4-speed automatic stereo/mono record changer mounted under sliding cabinet top • Sonotone cartridge with turnover diamond and sapphire styli • Volume and separate bass & treble controls mounted on front panel • Size: 31¾″ L x 17¾″ D x 26⅜″ H. •78 lbs.

Kit GD-31, $12 mo. **$129.95**
Assembled GDW-31, $14 mo. **$149.95**
ADA-50-1, 45 rpm adapter spindle, 1 lb. **$2.95**

GD-71
$19.95

TELEPHONE AMPLIFIER



• Permits hands-free telephone talks
• Ideal for executives, secretaries
• All transistor circuit—instant operation
• Works well with most modern handsets

Convenient, saves time! Take dictation, or look for notes while carrying on a 2-way conversation! Self-contained battery lasts up to 2000 3-minute calls. Takes just a few hours to assemble. Works well with most modern handsets. Handsome ivory colored case measures 5⅞″ W x 9¼″ D x 6″ H. 3 lbs. Less battery.

Kit GD-71, 3 lbs. **$19.95**
GWA-30 Battery Set: (2) one operation, one spare, 1 lb. **$2.95**

GD-51-2
$45.90 (pair)

All-Master "WIRELESS" INTERCOM

• No connecting wires between units, just plug into nearest outlet . . . costs less than 3c a month to operate
• All-transistor circuit—built-in AC or DC power supply
• Add additional units at any time to expand system
• Handsome two-tone beige plastic cabinets

High operating economy, easy installation, and handsome modern styling is featured in this "All-Master" wireless intercom system. Perfect for home, office or factory! The power line fed by any one pole line transformer is used as the transmission medium for the low frequency AM RF signal . . . no connecting wires between units necessary . . . just plug the line cord into the nearest outlet and units are ready to operate! You can add additional units at any time to expand the system without changing or adding wiring. Other features include: a squelch circuit for full quieting on standby, overload diode to prevent distortion on high-level signals, and transmit & standby indicating lights. Press-to-talk bar switch has spring-return to listen position and a transmit "hold" position for dictating.

Kit GD-51-2 (pair) 8 lbs. . . . no money down, $5 mo. **$45.90**
Kit GD-51 (one station) 4 lbs. **$22.95**

SPECIFICATIONS—Power requirements: 105-125 V 50/60 cycle AC or DC. **Standby power:** 2.5 watts. **Transmit frequency:** 220 kc & 180 kc (switch selected). **Size:** 6¼″ H x 8″ W x 7½″ D.

All-Transistor INTERCOM with all-installation flexibility

Complete Set
$44.85

• Beautifully styled beige plastic cabinets
• Weatherproofed outdoor remote
• Master takes up to 5 remote stations
• Efficient 1 watt output, 3.5 watt power drain

Indoors, outdoors, this versatile intercom saves you time, steps, and money! Master unit has one-watt output and specially designed frequency response for crisp, clear communications; separate level controls for listen and talk functions; accepts up to five remote stations with "selective-call" of any one remote or "all-call" of all remotes for paging or announcements; built-in AC power supply. The indoor remotes have "listen-talk-monitor" switch. Outdoor remotes have doorbell button, weatherproof speaker, aluminum grille, and weather seal. Each remote has a 50′ connecting cable. Easy to build.

Kit GD-121 Master Station . . . 5 lbs., no money down, $5 mo. . . **$29.95**
Kit GD-131 Indoor Remote . . . 3 lbs. **$8.95**
Kit GD-141 Outdoor Remote . . 2 lbs. **$5.95**

SPECIFICATIONS—Power requirements: 117 v ac 50/60 cycles 2.5 watts (idling), 3.5 watts (full output). **Transistors:** four 2N1274. **Dimensions:** 6¼″ H x 8″ W x 7½″ D (master), 5″ H x 8″ W x 6″ D (indoor remote), 5¾″ x 4½″ panel size (outdoor remote).

SHORT WAVE

Choose Heathkit® Radio for

$39.95 GR-91

Your Best Buy in SHORTWAVE RADIO Listening . . . The Heathkit GR-91

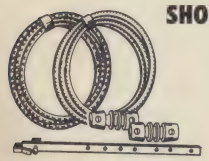
- 550 kc to 30 mc coverage in four bands
- Built-in relative signal strength meter
- Safe, dependable transformer operated power supply

Thrill to world-wide news as it happens . . . listen in on amateur radio operators . . . pick up standard broadcast stations for music, news, and sports entertainment. It all happens with the Heathkit GR-91 General Coverage Receiver kit . . . a sensitive receiver that covers from the broadcast band to the ten meter amateur band. The lighted 7" slide-rule dial has four scales plus an extra "logging" scale . . . shortwave bands are clearly marked for convenience.

Features include lighted "S" meter for easy tuning, electrical bandspread for station separation, BFO for listening to code and SSB transmissions, built-in speaker, headphone jack, noise limiter, and complete front panel controls. "Velvet touch" tuning makes 16 revolutions to cover the dial. Antenna inputs accept balanced 300 ohm or unbalanced 75 ohm antennas. The 4-tube superheterodyne circuit has a transformer operated silicon rectifier power supply for safety and durability. Styling of the all-steel cabinet is in beige and aqua colors. Easy circuit board assembly. Approximate alignment possible without RF signal generator.

Kit GR-91, 14 lbs., no money dn., $5 mo. **$39.95**

SPECIFICATIONS—Frequency range: 500 kc to 30 mc in four bands. Short wave, broadcast bands clearly marked on dial. **Controls:** General coverage tuning, Bandspread tuning, Antenna trimmer, Bandswitch, Noise Limiter—ON/OFF, phone-Standby-CW switch, BFO control, Audio Gain, AC-ON/OFF, Headphone jack, Q-multiplier input jack. **Power requirements:** 105-125 V 50/60 cycles AC, 30 watts. **Dimensions:** 12¼" W x 5½" H x 8¼" D.



SHORTWAVE ANTENNA KIT

Includes 75 foot long-wire antenna, 30 foot lead-in wire, porcelain insulators, and grounding hardware. Complete instructions for installation.

Kit GRA-72, 1 lb. **$1.45**

Low Cost, High Value Beginner's SHORT-WAVE RADIO . . . Heathkit GR-81

- Covers long-wave and short-wave frequencies
- Sensitive regenerative circuit
- Built-in speaker plus headphone jack

$24.95 GR-81

Here's an easy way for the beginning short-wave fan to listen to the world. Easy to build and easy to buy, this compact radio has unusually wide frequency coverage. It tunes all the way from the low-frequency marine and aircraft bands to the international broadcast and 20 meter amateur radio bands. You'll hear weather broadcasts, distress signals, regular broadcast stations, government and foreign broadcasts plus the 160 to 20 meter amateur stations. It has complete controls and is transformer operated for safety. Build it in 6 hours.

Kit GR-81, 11 lbs., no money down, $5 mo. **$24.95**

SPECIFICATIONS—Frequency coverage: 140 kc to 18 mc on four bands. **Tube complement:** 12AT7 Detector/1st Audio, 50C5 Audio Output, 35W4 Rectifier. **Power requirements:** 105-125 V 50/60 cycle AC only, 30 watts, Fused. **Controls:** Main Tuning (calibrated), Bandspread, Bandswitch, Regeneration, On/Off Volume, Phone Jack. **Dimensions:** 10" W x 7" H x 7" D.

All-Transistor SHORTWAVE PORTABLE RADIO . . . Top Quality at 50% Savings

GC-1A $109.95

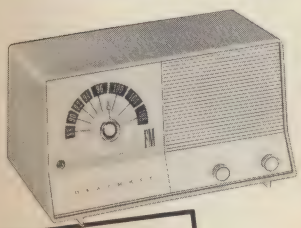
- 10-transistor, 6-diode circuit
- 550 kc to 32 mc in five bands
- Battery powered

Compare the "Mohican" . . . deluxe features, outstanding performance, and a price that is less than half what you would expect!

The all-transistor circuit uses advanced design usually found only in more expensive receivers. "Drift field" transistors assure improved high frequency performance. Ceramic IF "transfilters" offer the convenience and performance of a fixed, narrow band-pass that needs no alignment. Zener diode voltage regulation stabilizes the "front end." Equipped with flywheel tuning, "S" meter, lighted dial, telescoping 50" whip antenna, oscillator tuned electrical bandspread, RF amplifier, and complete controls, the GC-1A performs equally well in your home, on the road, or in the field. Requires RF generator for final alignment. Styled in two-tone green. Less batteries.

Kit GC-1A . . . 18 lbs., no money down, $11 mo. **$109.95**
Assembled GCW-1A . . . no money down, $19 mo. **$193.50**
Kit XP-2 . . . 117 VAC plug-in power supply; 2 lbs. **$9.95**

SPECIFICATIONS—IF frequency: 455 kc. **Frequency coverage:** 550 kc to 32 mc in 5 bands with calibrated bandspread scales (oscillator tuning) for 80, 40, 20, 15 and 10 meter amateur bands and 11 meter citizens band. **Selectivity:** 3 kc wide at 6 db down. **Sensitivity:** 10 uv broadcast band, 2 uv short wave bands for 10 db signal-to-noise ratio. **Output:** 400 milliwatts max. **Battery life:** up to 400 hours normal intermittent service using 8 standard size "C" cells. **Dimensions:** 6⅞" H x 12" W x 10" D.



Special-Value Price only $24.95 Big Volume Passes Extra Savings To You

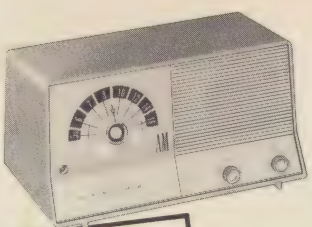
Best-Buy Heathkit FM TABLE RADIO

- Transformer operated safety
- Preassembled, prealigned tuning unit

Just four hours of easy assembly brings you superb FM listening entertainment. 5 tube circuit has 7 tube function including RF stage. Tuned circuits are factory aligned. Beige plastic case. 6 lbs.

Kit GR-11, was $27.50, now **$24.95**

SPECIFICATIONS—Frequency coverage: 88-108 mc. **IF frequency:** 10.7 mc. **Power requirements:** 105-125 volts AC 50/60 cps. **Speaker:** 3" PM. **Antenna:** built-in line, provision for external antenna. **Dimensions:** 5" H x 10" W x 5" D.



Special-Value Price only $17.95 Big Volume Passes Extra Savings To You

Decorator-Design Heathkit AM TABLE RADIO

- Transformer operated safety
- 5 tube superheterodyne with 7 tube function

Highly styled in ivory & beige plastic. Top performer too with automatic vol. control and vernier tuning. Built-in ferrite rod antenna. 6 lbs.

Kit GR-10, was $19.95, now **$17.95**

SPECIFICATIONS—Frequency coverage: 535-1620 kc. **IF frequency:** 455 kc. **Power requirements:** 105-125 volts AC 50/60 cps. **Speaker:** 3" PM. **Antenna:** built-in ferrite rod. **Dimensions:** 5" H x 10" W x 5" D.

Quality and Savings

HEATHKIT®

NEW LOW PRICE
SAVE $7.00
$47.95

All-Transistor FM PORTABLE RADIO . . . Amazing Performance . . . Extra Value

• 10-transistor, 4-diode circuit • 88-108 MC range with vernier tuning • Telescoping antenna, high sensitivity • Tuned RF stage and 3 IF Amplifier-Limiters • Automatic Frequency Control with defeat switch • Push-pull output and big 4" x 6" speaker • Tone control and headphone jack

Enjoy the clarity and fidelity only FM can provide, wherever you are! This superb Heathkit FM radio delivers performance you never dreamed possible in a portable. Sensitive, clear, quiet reception indoors or out, thanks to its no-compromise circuit. It features a preassembled and prealigned "front end" for factory-built performance, three IF amplifier-limiter stages for high gain and full quieting, automatic frequency control (AFC) for drift-free reception, and a push-pull output stage for big power, low distortion sound . . . plus a 4" x 6" oval speaker with heavy magnet for "big set" tone.

Easy to use, it features vernier tuning for easy station selection, volume control, and treble-cut control for tone just the way you like it. The dual input antenna system allows use of the built-in telescoping 34" whip antenna or terminals for connection of an outside FM antenna. For private listening or connection to your hi-fi system, a headphone jack is provided which automatically "cuts off" the speaker when a plug is inserted.

Employs easy-to-wire circuit board construction and prealigned IF transformers. Styled in suntan simulated leather case with beige grille. Less battery.

Kit GR 61,...6 lbs.,...no money down, $5 mo.....**NOW $47.95**
GRA-131-1, Battery for above, 2 lbs.....**$1.10**

SPECIFICATIONS—Tuning range: 88 MC to 108 MC. **IF frequency:** 10.7 MC. **Audio output:** 250 milliwatts. **Loudspeaker:** 4" x 6" permanent magnet. **Tone control:** Treble-cut. **Recommended battery:** 9 volt, Long-life, leakproof, NEDA #1612, Eveready #2356. **Battery life:** 300 to 500 hours. **Dimensions:** 7¾" H x 10" L x 4" D (overall). **Styling:** Sun-tan simulated leather case, curved beige plastic grille.

More than One Hundred Thousand have bought this full-size PORTABLE at small-size cost . . . The All-Transistor Heathkit XR-2

• 6-transistor, 2-diode circuit
• Vernier tuning
• Built-in antenna
• Big 4" x 6" speaker

XR-2L
$34.95

XR-2P
$29.95

Why settle for a midget when a giant costs no more? A giant in performance and appearance, this portable works where others fail, wins awards for its handsomely styled case which measures 7¾" H x 10" L x 4" D and comes in rich mocha plastic or suntan simulated leather. Its all-transistor circuit operates up to 1000 hours on 6 low cost "D" size batteries (not included). Features include vernier tuning for easy station selection, built-in antenna, push-pull output, and large speaker for "big set" tone quality. Join the thousands who enjoy the fine performance of this Heathkit. 5 lbs.

Kit XR-2P, plastic, no money dn., $5 mo.....**$29.95**
Kit XR-2L, sim. leather, no money dn., $5 mo.....**$34.95**

SPECIFICATIONS—Tuning range: 540-1620 kc. **Sensitivity:** 350 uv/m for 15 db signal-to-noise ratio at 50 mw output. **Transistors:** 6: 2N1108, 2N1110, 2N1111, R251, (2) R250. **Diodes:** 2.

Beginner's Heathkit . . . All-transistor PORTABLE RADIO with FREE Tool Kit

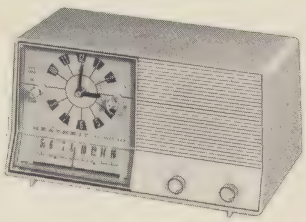
• 6-Transistor, 2-Diode Circuit On Easy-To-Build Circuit Board • Big 4" x 6" PM Speaker • Suntan Simulated Leather Case • Compares with Portables Costing $40 or more • Complete with Battery & All The Tools You Need To Build It.

$21.95 GR-151

Let us help you prove to yourself that you can build a Heathkit. This handsome portable radio comes complete with everything you need to build it. Easy to follow instructions, clear pictorial diagrams, labeled circuit board, all parts, free soldering iron, solder, wire stripper, screwdriver, nut starter, and adjustment tool, plus 9-volt battery. The deluxe 6-transistor superheterodyne receiver has a built-in antenna for long-distance reception, big speaker for good tonal quality, and special overload diode for distortion-free listening. This is the low-cost way to start your Heathkit building career . . . order yours today.

Kit GR-151, Radio & Tool Set, 5 lbs.....**$21.95**

Versatile, Easy-to-Build AC CLOCK RADIO Kit



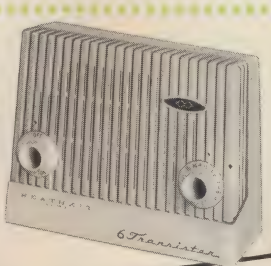
• Transformer operated safety
• Timer outlet for appliances
• Sleep Switch—Radio Alarm —Pillow Speaker Output

Faithful servant, handy too! Wakes you to music, starts the coffee automatically, entertains all day long, lulls you to sleep. 5 tubes work like 7; clock/timer has sweep second hand; "sleep" switch adjustable to one hour; ivory & beige. 8 lbs.

Kit GR-121, $5 mo.....**$29.95**

SPECIFICATIONS—Circuit: 5-tube superheterodyne. **Frequency coverage:** 535-1620 kc. **IF frequency:** 455 kc. **Power supply:** Transformer operated. **Speaker:** 3" PM. **Controls:** on/off volume, tuning, "Sleep Switch", "Radio Alarm". **Dimensions:** 5" H x 10" W x 5" D.

Low Cost Cordless AM TABLE RADIO



• 6-Transistor, 2-Diode Circuit
• Big 4" x 6" PM Speaker
• Built-in Rod Antenna

Nothing to plug in, battery powers it anywhere at home, at work, even outdoors! Easy circuit board assembly. Ivory & green case. Less battery. 3 lbs.

Kit GR-131, was $19.95, now.....**$17.95**
GRA-131-1, Battery, 2 lbs.....**$1.10**

SPECIFICATIONS—Tuning range: 535-1620 kc. **Sensitivity:** 300 uv/m for 20 db S/N ratio @ 50 mw output. **Battery:** (1) 9V long-life leakproof NEDA #1612, EVEREADY #2356. **Battery life:** 500-1,000 hours. **Dimensions:** 8" L x 6¼" H x 3" D.

Special-Value Price only $17.95
Big Volume Passes Extra Savings To You

TUNERS & AMPLIFIERS

Matching Stereo Tuners

Kit Form or Factory Assembled

AJ-41

$119.95

SPECIFICATIONS FM—Tuning range: 88 mc to 108 mc. **IF frequency:** 10.7 mc. **Frequency response:** ±2 db, 20 to 20,000 cps. **Antenna:** 300 ohm balanced (for internal or local reception). **Output voltage:** Nominal .5 volts (with 3 uv 30% modulation in). **Quieting sensitivity:** 2 uv for 20 db of quieting 20 uv for full quieting (40 db). **Maximum deviation sensitivity:** 5 uv; (400 cycle 100% modulation). **Deviation sensitivity:** 20 KC (1100 uv in). **Harmonic distortion:** Less than 1% (1100 uv 400 cycle 100% modulation). **Image ratio:** 40 db. **AFC correction factor:** 12 db. **Amplitude modulation suppression:** 25 db. **Hum and noise:** 40 db below 30% modulation (20 uv in). **SPECIFICATIONS MULTIPLEX—Audio frequency response:** ± 2 db, 50 to 15,000 cps. **Sub-carrier bandpass:** ± 3 db 23,000 to 53,000 cps. **Channel separation:** 30 db. **Hum and noise:** —55 db (relative to 1 volt rms output). **Output impedance:** Cathode follower, variable to 4,000 ohms (each channel). **SPECIFICATIONS AM—Sensitivity, narrow bandwidth position:** 1400 kc, 5 uv; 1000 kc, 6 uv; 600 kc, 10 uv. (standard IRE dummy antenna, .1 volt RMS reference output). **Sensitivity change, narrow to broad position:** —5 db, **IF bandwidth, narrow:** 14 kc, 6 db down; **Broad:** 20 kc, 6 db down. **Image ratio:** 1400 kc 50 db; 600 kc 75 db. **Harmonic distortion:** Less than 1%. **Hum and noise:** 35 db below 30% modulation (1000 kc unmodulated with 100 uv in). **IF rejection ratio:** 1400 kc 42 db; 600 kc 38 db. **Power supply:** Transformer operated, 117v., 50-60 cycle, 100 watts. **Dimensions:** 5⅝" H x 15⅝" W x 14" D.

AA-11

$84.95

World's best buy in deluxe Stereo Preamplifiers . . . Heathkit AA-11

- **Basic controls on front panel**
- **Secondary controls behind hinged lower front panel**
- **Push-button selected inputs • Self-powered • DC filaments**
- **More stages for lower noise figures • Controlled center channel**
- **Deluxe styling matches AJ-41 tuner above**

Compare this deluxe stereo preamplifier by any standard, specifications, versatility, features, or price . . . you'll find that it is a superior value in every way. Nine push-buttons select phono, tape, microphone, multiplex tuner, and auxiliary stereo inputs, plus monophonic AM and FM tuners, and auxiliary . . . the remaining push-button is the on-off switch. Basic controls are on the front panel . . . secondary controls are easily accessible behind the hinged lower front panel. Deluxe styling in tan vinyl clad steel.

Kit AA-11, 20 lbs., no money down, $9 mo.....**$84.95**

SPECIFICATIONS—Inputs: 5 stereo each channel and 3 monophonic. **Outputs:** One low impedance to power amplifier and one low impedance to tape recorder in each channel plus a "derived center channel" monophonic output. **Frequency response:** ± 0.5 db, 20 to 20,000 cps. **Harmonic distortion:** Max. .05% @ 2.5 volts output. **Intermodulation distortion:** Max. .09% @ 2.5 volts output. **Hum and noise:** Relative to 2.5 V rms output; 6 mv input at Mag. phono input, 60 db or better. **Channel separation:** 1 kc, 36 db or better. **Rumble filter:** 3 db down at 42 cycles, 12 db attenuation per octave. **Scratch filter:** 3 db down at 6 kc, 20 db attenuation per octave. **Baxandall tone controls:** 12 db boost, 16 db cut at 20 cps; 12 db boost, 20 db cut at 20,000 cps. **Controls:** Separate Bass & Treble, each channel; Volume-Loudness, Blend, Balance, Rumble Filter, Scratch Filter, Volume-Loudness Switch, Stereo Mono switch, 9 push-button Source Selector switch, Phase-Reversal switch, and Channel Reversal switch. **Tube complement:** (8) 12AX7, (2) 12AT7. **Power requirements:** 117 V AC, 50-60 cycles. **Dimensions:** 5½" H x 11½" D x 15⅝" W.

Best Performance . . . Best value . . . Heathkit AJ-41 AM-FM-STEREO TUNER is engineered for excellence with great savings

• Built-in stereo adapter • Broad-band circuitry • Automatic FM stereo indicator • Adjustable AFC • Adjustable FM squelch • Stereo phase control for maximum performance • Individual tuning meters • Filtered stereo tape recorder outputs • Built-in antennas • Easy to build with factory aligned front-end and circuit board construction • Matches AA-21 or AA-100 Stereo Amplifiers next page

The most completely engineered stereo tuner in the kit industry, the deluxe Heathkit AJ-41 is incomparable in performance and value. Here is maximum fidelity AM . . . the noiseless high fidelity of monophonic FM . . . and the wonder of Stereo FM with its new dimension in listening . . . all at an amazingly low price.

All the features are here for finest performance . . . automatic indicator to show when stereo is being broadcast . . . individual tuning meters for precise station settings . . . FM squelch to eliminate between-station noise . . . phase control for maximum separation and minimum distortion on stereo . . . filtered tape recorder outputs for best stereo recordings . . . easy flywheel tuning action . . . lighted slide rule dial . . . automatic frequency control for drift-free reception . . . fidelity switch for normal or maximum AM fidelity. Styled in tan vinyl-clad steel with polished, anodized trim.

Order this extra-sensitive tuner now—it's your best value in fine listening. 27 lbs.

Kit AJ-41, no money down, $11 mo.....**$119.95**
Assembled AJW-41, no money down, $18 mo.....**$189.95**

Kit Form or Factory Assembled

AJ-30 $99.95

Deluxe Monophonic AM-FM TUNER

• Output for FM stereo adapter • Preassembled tuning section • Two tuning meters • Easy circuit board construction

Famous forerunner of the AJ-41 above, the Heathkit AJ-30 monophonic AM-FM tuner is styled like the AJ-41 and its AM and FM specifications are similar. For FM Stereo later on, add the AC-11 adapter (page 24). Exceptional value.

Kit AJ-30, 25 lbs., no money down, $10 mo.....**$99.95**
Assembled AJW-30, 24 lbs., no money dn., $15 mo.....**$159.95**

AA-121 $79.95

Ultra-Linear® 80-watt STEREO POWER AMPLIFIER . . . Heathkit AA-121

• Professional stereo or mono power • 40 hi-fi-rated watts per channel • Patented Heath Ultra-Linear® circuit • Fixed bias output for lowest distortion • Front panel controls • Extra mixed-channel center speaker output

Kit AA-121, 39 lbs., no money down, $8 mo.....**$79.95**

SPECIFICATIONS—Channels: 2. **Power output:** 80 watts (40 w. per channel) Heath Hi Fi Rating; 98 watts (49 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±0.5 db, 20-20,000 cps, at 40 watts output per channel. **Harmonic distortion:** 1.5% or less, 20-20,000 cps, at 40 watts output per channel. **Intermodulation distortion:** 0.5% or less at 40 watts output per channel, 60 and 6,000 cps mixed 4:1. **Hum and noise:** 85 db below 40 watts output. **Channel separation:** 70 db or better at 1 kc. **Input sensitivity:** 0.95 volts rms for 40 watts output per channel. **Outputs:** 4, 8, 16, and 32 ohms per channel; center speaker terminals can be used with 4, 8 or 16 ohm speakers. **Damping factor:** 16:1, 8 and 16 ohm taps; 12.5:1, 4 ohm tap. **Controls:** A Channel: bias balance, bias voltage, level. B Channel: bias balance, bias voltage, level. Function selector; phase and power switches. **Tube complement:** 2-6AN8; 4-EL34, 4 silicon diode rectifiers, 1 selenium bias rectifier. **Power requirements:** 117 v, 50-60 cycles, 180-320 watts. **Power outlets:** 2 AC outlets; 1 switched, 1 unswitched **Color and finish:** metallic bronze, expanded metal dust cover; black chassis with ivory lower front panel. **Dimensions:** 7¼" H x 15" W x 11" D.

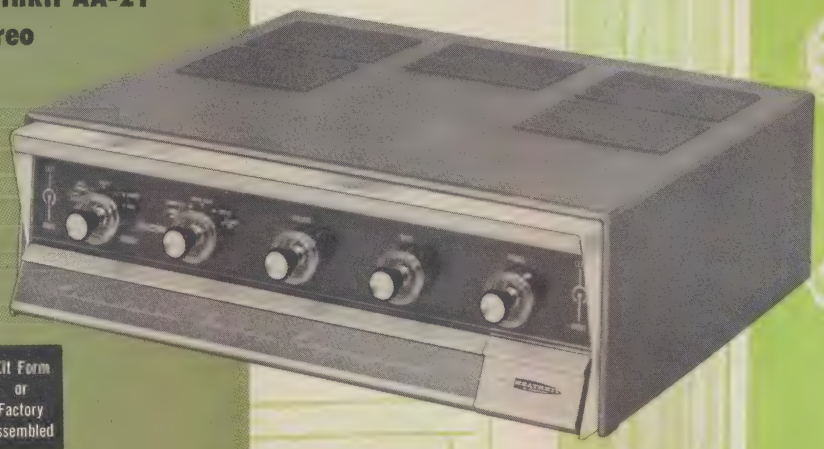
SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK

& Amplifiers...Your Best Buy

All-transistor . . . all deluxe . . . Heathkit AA-21 delivers 100 watts of finest stereo for just $134.95

- **Superb dynamic range, 13-25,000 cps ±1 db at full power**
- **Smooth full power delivery—100-watt IHFM music power rating, 70-watt Heath rating**
- **World's most completely engineered circuit—28 transistors, 10 diodes**
- **Complete freedom from microphonics**
- **Cool operation**
- **Easy to build with encapsulated circuit modules plus circuit boards**
- **Easy to operate—basic controls on front panel—secondary controls behind hinged lower front panel**
- **Perfect match for AJ-41 Tuner**

Kit Form or Factory Assembled



Compare the all-transistor AA-21 stereo combination amplifier with any other . . . transistor or tube type . . . you'll find it has more features, better engineering, greater performance, and a lower price.

The AA-21 delivers full power, more power throughout the entire audio spectrum, with startling fidelity. It features: transformerless output, multiple feed-back loops, 5-position dual concentric input selector for mixing inputs, 5-position mode selector, dual concentric volume, bass, and treble controls. Behind the hinged lower front panel are: tape-monitor switch, speaker phase reversal, loudness switch, and all input level controls. 6 stereo inputs and 4 stereo outputs on rear of chassis; 5 fast acting circuit breakers; 5 circuit boards, 6 encapsulated component modules (70 resistors and capacitors all wired and sealed); deluxe styling in tan vinyl-clad steel.

Your stereo music sounds best with the AA-21 . . . order now. 28 lbs.

Kit AA-21, no money down, $13 mo. **$134.95**
Assembled AAW-21, no money down, $21 mo. **$219.95**

SPECIFICATIONS—Power output per channel: (Heath rating), 35 watts/8 ohm load—26 watts/16 ohm load—18 watts/4 ohm load; (IHFM music power output): 50 watts/8 ohm load—34 watts/16 ohm load—25 watts/4 ohm load (@0.7% THD, 1 KC). **Power response:** ± 1 db from 13 cps to 25 kc @ rated output, ± 3 db from 8 cps to 40 kc @ rated output. **Harmonic distortion (at rated output):** Less than 1% @ 20 cps, 0.5% @ 1 kc, 2.0% @ 20 kc. **Intermodulation distortion (at rated output):** Less than 1%, 60 & 6,000 cps signal mixed 4:1. **Hum and noise:** Tapehead, 40 db below rated output; Mag phono, 45 db below rated output; Aux. inputs, 60 db below rated output; Tape monitor, 70 db below rated output. **Channel separation:** 40 db min. @ 20 kc, 55 db min. @ 1 kc, 50 db min. @ 20 cps. **Input sensitivity:** (For 35 watts output per channel, 8-ohm load) Tapehead, 2 mv; Mag. phono, 3 mv; Tuner, .25 v; FM Stereo .25 v; Aux., .25 v; Tape Monitor, .90v. **Input impedance:** Tapehead, 60 K ohm; Mag. phono, 30 K ohm; Tuner, 100 K ohm; FM Stereo, 100 K ohm; Aux., 100 K ohm; Tape Monitor, 47 K ohm. **Outputs:** 4, 8, & 16 ohms and low impedance tape recorder outputs. **Controls:** 5-pos. Selector (dual-concentric). 5-pos. Mode switch, dual-concentric Volume, Bass & Treble controls, Tape monitor sw., Loudness sw., Phase sw., Input level controls (all inputs except Tape Head & Tape Monitor inputs). Push-Push on/off switch. **Semiconductor complement:** 28 Transistors, 10 diodes. **Power requirements:** 105-125 volts, 50-60 cycles AC, 35 watts idling, no signal; 200 watts, full power out, @ 120 volts with no load on AC receptacles. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15¼" W x 5" H x 14" D.

The audiophile stereo-value favorite . . . Heathkit AA-100 50-watt tube-type STEREO COMBINATION AMPLIFIER

- **Hi-fi-rated at 50 watts (25 per channel)**
- **5 stereo inputs • Versatile controls**
- **Mixed center channel speaker output**
- **Separate monophonic phono input**
- **Easy circuit board assembly**
- **Deluxe styling to match the AJ-41 tuner . . . styled similar to AJ-32 Tuner**

Kit Form or Factory Assembled

A recognized value standard with discriminating music lovers everywhere, the Heathkit AA-100 offers professional performance and features at the low price of just $84.95!

$84.95 AA-100

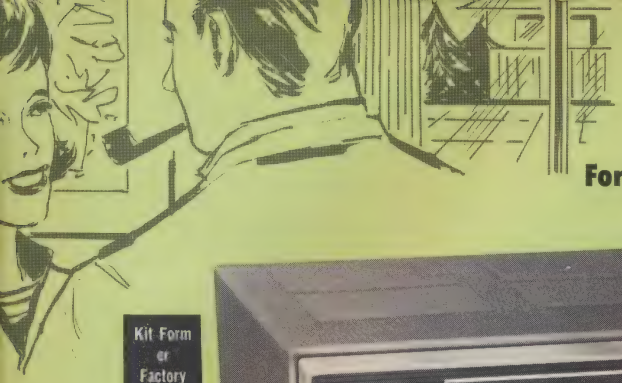
Exceeding the conservative Heath specifications in every way, it delivers 50 stereo watts by Heath standards, 60 watts by IHFM standards with exceptional fidelity. It features: 5 stereo inputs plus a monophonic phono input, 3 speaker impedances plus a mixed-channel center speaker output for "center fill-in" in stereo or monophonic sound to other rooms; cathode follower tape recorder outputs; complete controls (preamp. input level and power amp. input level, hum, 4 position mode selector, 6 position input selector, speaker phase switch, balance and separation, ganged volume control, and separate dual concentric bass and treble controls).

Styling is in the deluxe Heathkit motif of tan vinyl-clad steel with polished anodized trim and refracted lighting bar above the front panel. Order your AA-100 now for years of stereo pleasure . . . it's an incomparable value.

Kit AA-100, 35 lbs., no money down, $9 mo. **$84.95**
Assembled AAW-100, no money down, $14 mo. **$144.95**

SPECIFICATIONS—Channels: 2. **Power output:** 50 watts (25 w. per channel) Heath Hi-Fi Rating; 60 watts (30 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ± 1 db from 30 cps to 15 kc at 25 watts output per channel. **Harmonic distortion:** Less than 0.5% at 25 watts, 1 kc. Less than 2% at 25 watts, 30-15,000 cps (each channel). **Intermodulation distortion:** Less than 1% at 25 watts, 60 and 6,000 cps signals mixed 4:1 (each channel). **Hum and noise:** Mag phono, 55 db below 25 watts output at 6 mv sensitivity. Tape head, 35 db below 25 watts output. Tuner and aux. inputs 70 db below 25 watts output. **Channel separation:** 42 db min. at 1 kc. **Input sensitivity:** For 25 watts output per channel; mono mag. phono, 1.5 mv; stereo mag. phono, 1.5 mv; tape head, 1 mv; tuner, 0.2v.; aux. 1 & 2, 0.2 v. **Input impedance:** Mag phono, 47 K ohms (may be changed); tape head, 470 K ohms; tuner & aux., 250 K ohms each. **Outputs:** 4, 8 and 16 ohms; cathode follower tape recorder outputs. **Damping factor:** 15. **Controls:** Function switch (4-position); selector switch (6-position); balance control (total range, 16 db); separation control; ganged level controls; dual-concentric bass & treble controls; phase and power switch. **Tube complement:** 2-EF86, 4-12AX7, 2-7199, 4-7591, 1-GZ34, 1-selenium bias rectifier. **Power requirements:** 117 volts, 50-60 cycles, 150 watts. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 5½" H. x 15¾" W. x 13½" D. (allow 1" for cables at rear).

SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK



Save Up To

For fine performance at low cost, you can't match this Heathkit AJ-12 FM/FM-STEREO TUNER anywhere

Kit Form or Factory Assembled

AJ-12
$69.95

- **Built-in FM stereo adapter**
- **FM stereo indicator light**
- **Stereo phase control for maximum separation**
- **Variable squelch • Adjustable AFC**
- **Filtered stereo tape recording output**
- **Easy circuit board assembly**
- **Perfect match for the AA-151 Amplifier next page**

Compare this Heathkit AJ-12 FM/FM-Stereo Tuner with any other, kit or wired . . . you'll find it can't be matched in value. It offers fine monophonic FM or stereo FM performance with the extra features which are usually found only on more expensive tuners . . . and all for the low, low price of just $69.95!

Completely engineered for stereo FM, this new Heathkit tuner has the broad-band circuitry necessary for good stereo reception and its built-in stereo adapter is an integral part of its design . . . no external accessories, no after-thought. A Stereo Indicator light signals the presence of a stereo broadcast as you tune across the FM band. An extra-value feature for fine performance is the Stereo Phase control which permits you to adjust for minimum distortion and maximum stereo separation. Adjustable automatic frequency control (AFC) assures that the FM station you tune in stays "locked in" to eliminate annoying drifting of the tuner . . . the adjustable feature permits you to use just the right amount of frequency correction to control drift. Variable FM squelch eliminates "between-station" noise as you tune across the band. Tuning is easy with its new bar type tuning "eye", edge-lighted dial, and heavy, die-cast flywheel tuning mechanism. Filtered stereo outputs permit clean, natural tape recordings. Styling is tastefully accomplished in tan vinyl-clad steel with charcoal gray front panel and polished anodized aluminum trim.

It's easy to build with a factory built and aligned front-end and circuit board construction. Order this remarkable value now. 16 lbs.

Kit AJ-12, no money down, $7 mo. **$69.95**
Assembled AJW-12, no money down, $11 mo. **$119.95**

SPECIFICATIONS—FM Section: Tuning Range: 88 mc-108 mc. **Intermediate frequency:** 10.7 mc. **Antenna:** Balanced input for external 300 ohm antenna. Internal line antenna. **Output voltage:** (30 microvolts at 30% Mod.) 0.35 volt. **Image ratio:** (30 microvolts, 30% Mod. at 98 mc): —45 db. **Harmonic distortion:** (25 microvolts, 100% Mod. at 98 mc): Less than 1%. **IF rejection:** (98 mc): —65 db. **FM audio response:** (20-20,000 cps): ±1 db. **AFC correction factor:** (Full AFC): 100 kc per volt. **AM suppression:** —30 db. **Hum and noise:** (25 microvolts, 30% Mod.): —48 db. **Quieting sensitivity:** 20 db-2½ microvolts; 30 db 3½ microvolts; 48 db-30 microvolts (max. quieting). **FM stereo converter section: Audio frequency response:** ±2 db from 50 to 15,000 cps. **Subcarrier bandpass:** ±3 db from 23,000 to 53,000 cps. **Channel separation:** 30 db or more at 1 kc; 25 db or more at 10 kc. **Hum and noise:** —55 db relative to 1 volt rms output. **Output impedance (cathode follower):** Variable to 15K, each channel. **Outputs:** Left Channel—Right Channel. **Size:** 5¼" H x 15¾" W x 10½" D.

Kit Form or Factory Assembled

AJ-32
$89.95

Here's AM-FM Stereo Tuning for just $89.95! . . . Better-value Heathkit AJ-32

When you choose the Heathkit AJ-32, you choose AM, FM or Stereo FM reception with a host of extra-value features normally found only on more expensive equipment . . . automatic signal to show the presence of an FM Stereo broadcast . . . phase control for best stereo reception . . . automatic frequency control for steady FM reception . . . bar-type tuning "eyes" for accurate tuning . . . lighted dial . . . flywheel tuning . . . AM fidelity switch for maximum or normal AM fidelity . . . filtered tape recorder outputs. Styled in the mid-line motif of Heathkit Stereo/Hi-Fi with tan vinyl-clad steel cabinet, charcoal gray panel, and anodized trim.

The assembly is fast and easy . . . the performance is exciting . . . the value is outstanding—order now. 21 lbs.

Kit AJ-32, no money down, $9 mo. **$89.95**
Assembled AJW-32, no money down, $14 mo. **$149.95**

- **Built-in stereo circuit • Stereo indicator light • Variable squelch**
- **Stereo control for maximum separation, minimum distortion • Variable AFC • Individual "Bar" tuning indicators • Filtered outputs for stereo tape recording • Easy to build with circuit boards and factory aligned front-end • Perfect match for AA-151 Amplifier opposite page**

SPECIFICATIONS—AM SECTION: Tuning range: 550 kc-1600 kc. **Intermediate frequency:** 455 kc. **Usable sensitivity (normal position):** 1400 kc—10 microvolts (20 db of quieting); 1000 kc—15 microvolts (20 db of quieting); 600 kc—40 microvolts (20 db of quieting). **IF bandwidth:** Normal—6 db —7 kc; Maximum—6 db—12 kc. **AM antenna:** Built-in rod antenna with provisions for external antenna and ground. **Output voltage (750 microvolts—30% mod.):** .75 volt. **Image rejection:** 1400 kc—40 db; 1000 kc—50 db; 600 kc—60 db. **Harmonic distortion: (750 microvolts—95% mod.):** Less than 1%. **Hum and noise: (5000 microvolts, 30% mod.):** 30 db. **IF rejection:** 1400 kc—30 db; 600 kc—50 db. **FM SECTION: Tuning range:** 88 mc—108 mc. **Intermediate frequency:** 10.7 mc. **Antenna:** Balanced input for external 300 ohm antenna. Internal line antenna. **Output voltage (30 microvolts—30% mod.):** .3 volt. **Image ratio (30 microvolts—30% mod. —98 mc):** —45 db. **Harmonic distortion (25 microvolts—100% mod. —98 mc):** Less than 1%. **IF rejection (98 mc):** —65 db. **FM audio response (20-20,000 cps):** ± 1 db. **AFC correction factor (full AFC):** 100 kc per volt. **AM suppression:** —27 db. **Hum and noise (25 microvolts, 30% mod.):** —48 db. **Quieting sensitivity:** 20 db—2½ microvolts; 30 db—3½ microvolts; 48 db—30 microvolts (max. quieting). **FM STEREO CONVERTER SECTION: Audio frequency response:** ± 2 db from 50 to 15,000 cps. **Subcarrier bandpass:** ± 3 db from 23,000 to 53,000 cps. **Channel separation:** 30 db or more at 1 kc; 20 db or more at 10 kc. **Hum and noise:** —55 db relative to 1 volt rms output. **Output impedance (cathode follower):** Variable to 4000 ohm, each channel. **Power supply:** Transformer operated, 117v., 50-60 cycle, 70 watts. **Outputs:** Left Channel—Right Channel. **Size:** 5¼" H x 15¾" W x 11" D.

Kit Form or Factory Assembled

AJ-11
$69.95

Bargain Monophonic AM-FM TUNER

- **Output for FM Stereo Adapter**
- **Adjustable AFC • Two tuning "eyes" • Easy to build with pre-aligned front end**

Save most on this Heathkit AJ-11 monophonic AM-FM tuner, predecessor of the AJ-32 above. Styling and specifications for AM and FM are similar to AJ-32. For FM Stereo, add the AC-11 adapter, p. 24.

Kit AJ-11, 21 lbs., no money dn., $7 mo. **$69.95**
Assembled AJW-11, 20 lbs., no money dn., $12 mo. **$129.95**

SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK

50% on Stereo with... HEATHKIT®

Your stereo dollar buys more when you choose this 28-Watt Heathkit AA-151 STEREO COMBINATION AMPLIFIER . . . just $59.95

Kit Form or Factory Assembled

AA-151

$59.95

- Two hi-fi-rated 14-watt channels . . . stereo preamps. and power amps.
- Use it for stereo or monophonic program sources
- 4 Stereo inputs • Complete controls
- Patented Heath Ultra-Linear® output circuit
- Easy-to-build conventional wiring
- Perfect match for Heathkit AJ-12 FM Stereo Tuner or the AJ-32 AM-FM Stereo Tuner

When you plan your stereo music system, take a good look at the Heathkit AA-151 . . . it's ideally powered for the majority of stereo needs, has a wealth of fine features for superb performance, and its low price makes it a value that defies comparison.

Check its specifications to prove to yourself that it's a remarkable performer . . . they are specifications that are conservative and easily attained by your own kit building efforts.

Part of the reason for the fine specifications of the AA-151 is the Heath patented Ultra-Linear® output circuit incorporated . . . a special circuit that assures high efficiency with high quality.

The full complement of controls in the AA-151 include: 6 position function selector switch to allow choice of Stereo Normal or Stereo Reverse, Monophonic Left or Right Program Source, and Left or Right Amplifier; 4 position source selector to choose magnetic or crystal phono, tuner or auxiliary source; dual concentric volume controls to permit individual or simultaneous adjustment of the two channels; separate ganged bass and treble tone controls; speaker phase reversal switch; and a filament balance control to effectively cancel hum. For convenience, two accessory AC outlets are provided on the rear chassis (one switched, one unswitched) to provide a handy plug-in power source for tuner and phono.

Styling is in the Heathkit Mid-Line motif of tan vinyl-clad steel with charcoal gray front panel and polished anodized aluminum trim which is a perfect match for the AJ-12 FM Stereo Tuner on the opposite page or the AJ-32 AM-FM Stereo Tuner on page 16; styling is sufficiently similar to also permit its use with the AJ-41 Tuner on page 16.

This easy-to-build amplifier uses conventional wiring techniques in a roomy chassis for simple kit completion. 29 lbs.

KIT AA-151, no money down, $6 mo. **$59.95**
Assembled AAW-151, no money down, $11 mo. **$119.95**

SPECIFICATIONS—Channels: 2. **Power output:** 28 watts (14 w. per channel) Heath Hi-Fi Rating; 32 watts (16 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 20 cps to 20 kc at 14 watts output per channel. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 14 watts output per channel. **Intermodulation distortion:** Less than 2% at 14 watts output per channel using 60 cps and 6 kc signal mixed 4:1. **Hum and noise:** Mag. phono input, 55 db below 14 watts; Tuner and crystal phono 65 db below 14 watts. **Channel separation:** Better than 45 db. **Input sensitivity:** For 14 watt output each channel (tone controls in "Flat" position): mag. phono, 0.004 volts at 1 kc; crystal phono, 0.2 volts; tuner and aux., 0.2 volts. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 10:1. **Controls:** Dual clutched volume, ganged bass; ganged treble; 4-position source selector; 6-position mode selector; speaker phasing switch. **Tube complement:** 2-6EU7, 2-6AU6, 2-6AN8, 4-EL84/6BQ5, 1-GZ34/5AR4. **Power requirements:** 117 volts, 50-60 cycles, 130 watts. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15¾" W. x 5¼" H. x 11" D.

Budget Special . . . Professional Stereo Preamp at a bargain price . . . Heathkit AA-141A

AA-141A

$34.95

- 8 inputs for any source
- Cathode follower outputs for amplifier and tape recorder
- Self-powered
- Baxandall-type tone controls
- 6-position selector
- Heathkit Mid-line styling matches AJ-32 tuner and AJ-12, opposite page

You save more, yet sacrifice nothing when you add this versatile, low cost stereo preamplifier to your music system. Every required convenience is included: four inputs per channel (one each for Mag. Phono, Crystal or Ceramic Phono, Tuner, or Tape Recorders); concentric volume controls: separate bass & treble controls. Tan vinyl cabinet included.

Kit AA-141A, 10 lbs., no money down, $5 mo. **$34.95**

SPECIFICATIONS—Channels: 2. **Inputs (each channel):** Mag Phono, Xtal Phono, Aux 1, Aux 2. **Outputs (each channel):** Power amplifier, tape recorder. **Frequency response:** (with the volume control at maximum and the Bass and Treble controls set approximately to the mid position): ±1 db from 20 to 20,000 cps. **Harmonic distortion:** (at 2.5 volts rms output, using AUX 1 or 2 input): .1% or less. **Intermodulation distortion:** (at 2.5 volts equivalent rms output using AUX 1 or 2 inputs): .1% or less. **Channel separation:** 45 db or better 20 to 20,000 cps. **Hum and noise (below 2.5 volts RMS):** Mag Phono, 55 db (or better); Xtal Phono, 65 db (or better); Aux 1 and 2, 65 db (or better). **Tube complement:** 6-6EU7 tubes. **Controls and switches:** Source Selector Switch, Bass controls, Treble controls, Volume controls, Mode Selector switch (left amp, right amp, mono left source, mono right source, stereo norm, stereo rev). Power (off-on), Filament balance (left channel and right channel). **AC receptacles:** 1-switched, 117 V AC, 375 watts maximum. 1-unswitched, 117 V AC, 375 watts maximum. **Power supply:** Transformer-operated, using two selenium rectifiers in a voltage doubler arrangement. **Power requirements:** 117 volts, 50-60 cps AC, 19.7 watts. **Dimensions:** 15¾" W x 5¼" H x 7-13/16" D, (overall).

Ultra-Linear® 28-watt STEREO POWER AMPLIFIER . . . Heathkit AA-111

- Ideally powered to fill majority of system needs • Conservatively rated at 14 hi-fi watts per channel • Patented Heath Ultra-Linear Circuit • Individual amplifier gain controls • Speaker phase switch • Supplies preamp. power • Easy circuit board assembly

AA-111

$44.95

Kit AA-111, 21 lbs., no money dn., $5 mo. **$44.95**

SPECIFICATIONS—Channels: 2. **Power output:** 28 watts (14 w. per channel) Heath Hi-Fi Rating; 32 watts (16 w. per channel) IHFM Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 30 cps to 15 kc at 14 watts output per channel. **Harmonic distortion:** 2% or less at 14 watts, 30 cps to 15 kc. **Intermodulation distortion:** 2% or less 60 and 6,000 cps signals mixed 4:1 at 14 watts output per channel. **Hum and noise:** 76 db below 14 watts output. **Channel separation:** 65 db. **Input sensitivity:** 0.74 v for 14 watts output per channel. **Input impedance:** 500 K ohm pot. **Outputs:** 4, 8 and 16 ohm. **Damping factor:** 5.25:1, 4 ohm tap; 10.2:1, 8 ohm tap; 11.5:1, 16 ohm tap. **Controls:** Left and right channel gain; AC switch; phase switch. **Tube complement:** 2-7199; 4-EL84/6BQ5; 1-GZ34/5AR4. **Power requirements:** 117 v. 50-60 cycles, 115 watts. **Power outlets:** 2 octal sockets for preamp power; supply 300 v at 10 ma, 6.3 volts at 1.1 amps at each socket. **Dimensions:** 6" H x 8½" D x 13" W.

SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK

New Values! Choose A Changer

ADP-53 (less base) $39.51

New Compact, Low Cost, Garrard Automatic Stereo/Mono CHANGER . . . The 1963 "Autoslim/P" with Cartridge just $39.51

• 4 speeds, automatic or manual • Only 6½" high, fits where others won't • Intermixes all size records of same speed • New tubular turntable-type arm with plug-in cartridge holder • Regular price $39.50 • Your choice of cartridges for 1c more

New styling, new features, new low cost makes the "Autoslim/P" a fine choice for any stereo/mono record playing system. Most compact of all, it will fit where others will not . . . only 6½" in height, overall! New cast aluminum tone arm with plug-in head has extra-sensitive stylus pressure control. New control panel has separate positions for automatic or manual playing. Separate spindles for automatic or manual use. 4-pole shaded "induction surge" motor with dynamically balanced rotor for constant speed without hum or vibration. New plug-in installation. Your choice of cartridges opposite for just 1 cent more! 9 lbs.

ADP-53 (not a kit) with A, B, C, D, or E cartridge... ...no money down, $5 mo.....**$39.51**
ADA-53-1, Garrard 45 rpm spindle, 1 lb.....**$3.80**
Bases: 14⅜" W x 12-11/16" D x 3½" H.
ADA-53U, Garrard B10U unfinished base, 4 lbs.....**$4.45**
ADA-53W, Garrard B10W walnut base, 4 lbs.....**$4.95**

SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45, and 78 rpm. **Motor:** 4-pole shaded, hum shielded. **Tracking:** will track per cartridge specifications. **Color:** gray and silver. **Wiring:** stereo, 4-pin/5-wire w/separate ground connection for hum elimination. **Cables furnished:** line cord and audio. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** 14¼" W, 12½" D, 4⅜" above and 2⅞" below top of motor board.

ADP-63 $79.51

Get a Famous Stereo Cartridge for Just 1c More with this New Garrard Type A AUTOMATIC TURNTABLE

• A true, dynamically-balanced tone arm • Built-in stylus pressure gauge • Plays warped or eccentric records even with table tilted • Full-size, heavily weighted turntable • 4-pole shaded motor-special design • Exclusive pusher platform for automatic play • Fully wired for stereo • New plug-in installation • Completely assembled, just install the cartridge • 4-speeds, automatic or manual • Choose any cartridge opposite for 1c more or new Shure Dynetic "Gard-A-Matic" for only $5 more • Regular price $79.50

Here's the finest in automatic turntables at a money-saving price! The new Garrard Type A turntable plus your choice of cartridges opposite for just 1c more than the cost of turntable alone or the new Shure "Gard-A-Matic" for only $5 more! This new Garrard has same quality motor and pusher platform that are proven by millions of playing hours. New tone arm has precision, balance, low resonance and playback characteristics of separate arms, plus adjustable counterweight and built-in pressure gauge. Tracking and tripping at any weight, even professional cartridges. 21 lbs.

ADP-63 with A, B, C, D, or E cartridge: specify; no money dn., $8 mo.....**$79.51**
ADP-63F with AD-693F Shure M-99A cartridge, no money dn., $9 mo.....**$84.50**
ADA-61-1, Garrard 45 rpm spindle, 1 lb.....**$3.80**
Bases: 16⅜" W x 13⅜" D x 3⅝" H.
ADA-63-2, Garrard B8U unfinished base, 4 lbs.....**$4.45**
ADA-63-3, Garrard B8W walnut base, 4 lbs.....**$4.95**

SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45, and 78 rpm. **Motor:** 4 pole shaded, hum shielded. **Tracking:** will track with "professional" model cartridges. **Turntable weight:** 6 lbs., non-ferrous metal. **Color:** gray, charcoal and chrome. **Wiring:** Stereo; 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** line cord and 2 audio. **Power requirements:** 100-130 volts 60 cycles AC. **Dimensions:** Requires mounting space 16" W, 13¼" D, 6" above and 2⅞" below top of motor board.

Shure M-99/A Dynetic "Gard-A-Matic" Stereo Cartridge for use with Garrard Type A Only
Floating cartridge retracts if arm is dropped, pressure exceeds 3 grams, or arm is dragged across grooves. Plastic bumper prevents damaging contact . . . saves records and cartridge! Just plug into Garrard Type A changer arm. **Manufacturer's Specifications: Frequency Response:** 20-20,000 cps. **Output:** .006v. **Separation:** more than 22.5 db at 1kc. **Load Impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 20 x 10^{-6} cm/dyne. **Tracking force:** 1.5-3 grams.
Model AD-693F, Reg. price $49.50;
TRADE-IN PRICE.....**$24.75**
ADA-693F replacement styli (Shure N-99 .7 mil diamond)...2 oz...**Net $19.11**

ADP-21 only $12 mo. $124.95

Assemble Your Own Fairchild Turntable and Save with This Exclusive Heathkit Price

• 33-1/3 & 45 rpm • Balanced tone arm • Heavy turntable • Walnut base • Fairchild SM-2 stereo cartridge included

Save on your Fairchild turntable with this semi-kit at the low Heathkit price of just $124.95. Easy to build . . . the tone arm and base are complete, just assemble the turntable. Fine performance is assured by these famous Fairchild features . . . push-pull speed selector; speed adjustment of ±1½%; solid cast aluminum turntable; rifle-drilled bearing well; Fairchild 500 arm with "anti-skate" and dynamic balancing; moving magnet Fairchild SM-2 cartridge with .0007 diamond stylus is completely compatible for stereo or mono; shock-mounted walnut top plate; matching walnut base. 27 lbs.

Kit ADP-21, no money down, $12 mo.....**$124.95**

SPECIFICATIONS—Impedance: 200 ohms per channel. **Inductance:** 500 mh per channel. **Dynamic mass:** 2 milligrams. **Track force:** 2.5 grams. **Compliance:** 5 x 10^{-6} cm/dyne. **Response:** 20-15,000 cps (±2 db). **Separation:** 20 db (±2 db) from 20-15,000 cps. **Recommended load:** 47K ohms per channel. **Output:** 5 mv at 3.8 cm/sec. **Wow:** .08% peak to peak. **Flutter:** immeasurable. **Rumble (Vertical and lateral):** —56 db below 7 cm/sec at 500 cps. **Dimensions:** 17⅞" W x 15" D, 3½" below mtg. board.

Robins Record Care Kit #ESK-3 only $3.38 Includes stylus pressure gauge, microscope, table level, cleaning cloth, stylus brush, record brush, tone arm lift.
ADP-623, 1 lb., Mfrs. list $5, **Net**.....**$3.38**

Save up to 64¾% on New Cartridges—trade in your old cartridge—send in your order at the trade-in price, we'll ship new cartridge & tell you how to send your trade-in later

A. GE VR-1000-7
Manufacturer's Specifications: Frequency response: 20-20,000 cps, ±3 db. **Output:** 0.010v. **Separation:** 20 db. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 4.5 x 10^{-6} cm/dyne, lateral; 4 x 10^{-6} cm/dyne, vertical. **Tracking force:** 3-7 grams.
Model AD-112A, Reg. price $24.95;
TRADE-IN PRICE.....**$9.95**
ADA-112A replacement styli (GE #DR-7D .7 mil diamond)...2 oz...**Net $12.69**

B. Shure M3D
Manufacturer's Specifications: Frequency response: 20-15,000 cps, ± 3db. **Output:** .005v. **Separation:** over 20 db @ 1 kc. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 4 x 10^{-6} cm/dyne in all directions. **Tracking force:** 3-6 grams.
Model AD-663B, Reg. price $44.10;
TRADE-IN PRICE.....**$15.95**
ADA-663B replacement styli (Shure #N3D .7 mil diamond)...2 oz...**Net $22.05**

C. Sonotone 9TA-SD
Manufacturer's Specifications: Frequency response: 20-17,000 cps. **Output:** .35v. **Separation:** 29 db @ 1 kc. **Load impedance:** 1-5 megohms. **Stylus:** .7 mil diamond & 3 mil sapphire. **Compliance:** 5.3 x 10^{-6} cm/dyne in all directions. **Tracking force:** 2-4 grams.
Model AD-132C, Reg. price $7.64;
TRADE-IN PRICE.....**$5.22**
ADA-132C replacement styli (Sonotone #N9916-SD .7 mil diamond, 3 mil sapphire)...2 oz.....**Net $3.23**

D. Pickering U38AT
Manufacturer's Specifications: Frequency response: 20-20,000 cps. **Output:** .002v. **Separation:** 35 db. **Load impedance:** 47,000-100,000 ohms. **Stylus:** .7 mil diamond. **Tracking force:** 2-5 grams.
Model AD-673D, Reg. price $46.50;
TRADE-IN PRICE.....**$16.95**
ADA-673D replacement styli (Pickering D-3807AT .7 mil diamond)... 2 oz.....**Net $16.00**

E. Empire 880
Manufacturer's Specifications: Frequency response: ±2 db 8-20,000 cps. **Output:** .007v. per channel. **Separation:** 30 db average, 1kc. **Load impedance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Compliance:** 10 x 10^{-6} cm/dyne. **Tracking force:** 2 grams recommended.
Model AD-683E, Reg. price $42.50;
TRADE-IN PRICE.....**$14.95**
ADA-683E replacement styli (Empire S-880-7RD .7 mil diamond)... 2 oz.....**Net $17.50**

& Cartridge - Save Up To $30

Now You Buy This Deluxe Heathkit STEREO/MONO RECORD CHANGER with Improved Cartridges at a New Lower Price!

AD-102 $56.45

• 4 speeds, automatic or manual • New 11" turntable • Record protecting "turntable pause" and "anti-skate" • Quick change cartridge holder • Your choice of cartridges at no extra cost

Now you save more than ever, receive more for your money with these deluxe full-featured Heathkit record changers! The 11" turntable provides better record support . . . "turntable pause" ends scraping and sliding records . . . "anti-skate" eliminates damaged lead-in grooves . . . pin-point bearings offer maximum compliance and optimum tracking for better performance, less record wear . . . vernier adjustment for stylus pressure . . . intermixing of all size records . . . two channel muting switch . . . RC network to silence change cycle noise . . . cartridge holder for 2, 3, or 4 terminal cartridges . . . 4-pole hum-shielded motor . . . white finish with brushed gold trim and oyster-white turntable pad. And now you can choose from better cartridges and pay less than ever for this fine changer! (See opposite page) 12 lbs.

Kit AD-102 with C cartridge, no money dn., $6 mo. **$56.45**
Kit AD-102 with A, B, D, or E cartridge, no money dn., $6 mo. . . . **$59.45**
ADA-60-1, 45 rpm spindle, 1 lb. **$2.95**

SPECIFICATIONS—Speeds: 16, 33⅓, 45 and 78 rpm. **Flutter and wow:** 0.18% rms or less. **Turntable speed:** Accurate within ±2%. **Change cycle:** Completed in 9 seconds. **Motor type:** 4-pole, hum shielded. **Type of drive:** Friction. **Tracking force:** 2 grams reliably initiates change cycle. **Record capacity:** Maximum of 10 records. **Control functions:** On-off switch; Manual reject; Manual Speed Selector. **Power requirements:** 105-130 volts, 60 cycles AC. **Dimensions:** 13½" W x 12" D x 5¼" above and 3" below mounting board.

Automatic STEREO/MONO RECORD CHANGER Kit

$46.90 AD-92

• 4 speeds, automatic or manual • 11" turntable
• Plug-in cartridge holder • Your choice of cartridges at no extra cost

Save most with these fine quality, low cost record changer kits! Deluxe features include "anti-skate" record protection . . . hum-shielded motor . . . automatic "off" . . . change cycle noise filter . . . handsome brown and beige color styling . . . your choice of new cartridges (see opp. page). 10 lbs.

Kit AD-92 with C cartridge, no money dn., $5 mo. **$46.90**
Kit AD-92 with A, B, D, or E cartridges, no money dn., $5 mo. . . . **$49.90**
ADA-80-1, 45 rpm spindle, 1 lb. **$2.95**

SPECIFICATIONS—Speeds: 16, 33⅓, 45 and 78 rpm. **Flutter & wow:** .2% rms or less. **Turntable speed:** Accurate within ±2%. **Change cycle:** Varies with turntable speed, completed in 8 seconds at 33⅓ rpm. **Motor type:** 4-pole hum shielded. **Type of drive:** Friction. **Tracking force variation:** Less than 0.9 grams from first to last record. **Record capacity:** 10-12", 12-10". **Control functions:** on-off switch with "pop filter", manual reject; manual speed selector. **Power requirements:** 105-130 volts, 60 cycles AC. **Dimensions:** 13¼" W x 11⅞" D x 5-11/16" above and 2⅝" below mounting board.

CHANGER BASES FOR AD-92, AD-102 MODELS: 14⅞" W x 13½" D x 3⅜" H, 3 lbs.
Assembled ADA-50W (walnut) 4 lbs. **$5.95**
Assembled ADA-50U (unfinished) 4 lbs. **$4.95**

BONUS-BUYS ON FINEST QUALITY RECORDINGS

Hours of Fun for the Whole Family—
Audio Book "Talking Book" Records—Save Up To 33%

Gather everyone around you, relax, and listen to the finest of the world's literature recorded for you on these famous Audio Book "Talking Book" discs. It's the kind of experience that memories are built upon. These 16-2/3 rpm recordings are on 7" discs, microgroove cut to provide up to one full hour on each disc. Each disc has 1-1/2" center hole.

TITLE	LBS.	ORDER NO.	LIST PRICE	NET PRICE
STORYTIME FAVORITES. 26 popular childrens stories, told by Jane Webb (2 records)	1	GDP-483	$ 2.95	$ 1.96
ALICE IN WONDERLAND. Visit Wonderland as Jane Webb plays Alice. (3 records)	1	GDP-493	$ 3.95	$ 2.62
WIZARD OF OZ. Join Dorothy in her adventures in the Land of Oz. By Marvin Miller & Jane Webb (5 records)	1	GDP-503	$ 5.95	$ 3.97
CHILD'S GARDEN OF VERSES. 52 poems by Robt. Louis Stevenson. Read by Elinor G. Hoffman (1 record)	1	GDP-513	$ 1.49	$ 0.99
JUST SO STORIES. Gene Lockhart reads all 12 of Kipling's immortal tales for children (5 records)	1	GDP-523	$ 5.95	$ 3.97
ADVENTURES OF PINOCCHIO. Marvin Miller in 51 roles (5 records)	1	GDP-533	$ 5.95	$ 3.97
TREASURE ISLAND. Hans Conreid reads Stevenson's immortal tale of gold, pirates and mutiny. (8 records)	1	GDP-543	$ 8.95	$ 5.97
CHRISTMAS CAROL BY DICKENS. Dan O'Herlihy reads Dickens most inspired writing. (4 records)	1	GDP-473	$ 4.95	$ 3.28
THE BEST OF MARK TWAIN. 17 hilarious stories and sketches read by Marvin Miller (4 records)	1	GDP-423	$ 4.95	$ 3.28
FAMOUS POEMS. 74 poems for family enjoyment. Read by Marvin Miller. (4 records)	1	GDP-443	$ 4.95	$ 3.28
GREAT TALES AND POEMS OF EDGAR ALLAN POE. 8 complete stories, plus poems. (4 records)	1	GDP-433	$ 4.95	$ 3.28
SONNETS OF SHAKESPEARE. Ronald Coleman reading all 154 sonnets. (3 records)	1	GDP-453	$ 3.95	$ 2.62
THE WRITINGS AND SPEECHES OF ABRAHAM LINCOLN. Read by Raymond Massey. (8 records)	2	GDP-463	$ 8.95	$ 5.97
STORIES FROM THE NEW TESTAMENT. 26 favorite stories. (2 records)	1	GDP-403	$ 2.95	$ 1.96
STORIES FROM THE OLD TESTAMENT. 21 treasured stories for young people. (2 records)	1	GDP-413	$ 2.95	$ 1.96
THE COMPLETE NEW TESTAMENT. Authorized King James version. (26 records)	7	GDP-393	$29.95	$19.97

The Best in Stereo Recordings! 10 Famous "Command" Records at 25% Off!

Acclaimed by critics of the music world, these COMMAND stereo recordings are without doubt the finest in sound . . . clarity and brilliance unmatched . . . naturalness without electronic gimmickry . . . all achieved through the medium of recording the originals on 35 mm magnetic film traveling at 18 inches per second. The benefits are absolutely no flutter, complete separation, excellent frequency response, greater range of dynamics, and superior signal to noise ratio. These are the most astonishing recordings you have ever heard . . . recordings you must add to your library . . . recordings you'll cherish for years.

TITLE	LBS.	ORDER NO.	LIST PRICE	NET PRICE
CAROUSEL. New recording with Alfred Drake & Roberta Peters; Jay Blackton directing.	1	ADP-303	$5.98	$4.38
ROME REVISITED. Features the Ray Charles Singers.	1	ADP-293	$5.98	$4.38
IRVING BERLIN. Played by Enoch Light and his orchestra at Carnegie Hall.	1	ADP-263	$5.98	$4.38
THE BIG BAND'S BACK IN TOWN. Starring Doc Severinsen, the brilliant trumpeter who developed in the big band tradition.	1	ADP-253	$5.98	$4.38
GREAT THEMES FROM HIT FILMS. Enoch Light and his orchestra with songs from West Side Story, Breakfast At Tiffany's, LaDolce Vita, and seven others.	1	ADP-243	$5.98	$4.38
ROMAN GUITAR. Vol. Two by Tony Mottola and his orchestra; Anema e Core, Autumn in Rome and ten others	1	ADP-233	$5.98	$4.38
STEREO 35/MM. Vol. II Enoch Light and his orchestra; an unforgettable listening adventure.	1	ADP-223	$5.98	$4.38
STEREO 35/MM. Vol. 1 Original Enoch Light recording at Carnegie Hall, a masterpiece.	1	ADP-213	$5.98	$4.38
BRAHMS SYMPHONY NO. 2 IN D. OP. 73. William Steinberg and the Pittsburgh Symphony Orchestra.	1	ADP-273	$5.98	$4.38
PICTURES AT AN EXHIBITION, MUSSORGSKY—RAVEL, L'Orchestre De La Societe Des Concerts Du Conservatoire; Andre Vandernoot.	1	ADP-283	$5.98	$4.38

Professional Stereo Recorders

Add this professional performing STEREO TAPE RECORDER to your music system . . . build it easily . . . save hundreds of dollars

- **Records and plays 4-track stereo or mono tapes**
- **Finest performance—wow & flutter 0.2% or less—Signal-to-noise 45 db or better—Distortion 1% or less**
- **Two inputs per channel with mixing controls**
- **Concentric, clutched level controls**
- **Two VU-type level meters** • **7½ & 3¾ ips speeds**
- **Easy circuit board construction**
- **FREE head alignment tape included**
- **Exclusive Heathkit version of the VEGA of California tape deck**

This new series of tape decks is without doubt the finest value that Heathkit has ever offered in stereo tape recorders . . . professional performance and features usually found only on recorders costing much more. It records and plays back 4-track stereo tapes, records and plays back 4 individual monophonic tracks, plays back conventional half-track monophonic tapes. Its construction is mechanically simple and sturdy, using a rigid die-cast aluminum base plate or frame to assure accurate fitting of parts and long, dependable service. Electronically, the AD-22 uses two identical channels with a combination record-playback head, erase head, and dual preamplifiers with NAB equalization. Record from high impedance microphones or from AM and FM tuners, phono, TV, etc.; level controls can be adjusted separately or simultaneously; VU-type meters allow accurate settings on both record and playback. Other features: record interlock button, hum balance controls, meter adjust controls, and bias-adjust capacitors.

AD-22

$179.95

SPECIFICATIONS—Record-play head: Type, 4-track stereo: Gap width .00017"; Impedance, High, 3340 ohms. **Erase head:** 4-track stereo. **Tape speeds:** 7½ ips and 3¾ ips as selected by speed selector. **Wow and flutter:** .2% at 7½ ips, .3% at 3¾ ips. **Signal-to-noise ratio:** 45 db or better at normal recording level. **Harmonic distortion (record-play):** 1% or less at normal recording level, with 400 cps signal, in accordance with NAB specifications. (National Association of Broadcasters). **Frequency response:** ±3 db, 40 to 15,000 cps at 7½ ips, ±3 db, 40 to 10,000 cps at 3¾ ips. **Playback equalization: NAB. Inputs (each channel):** Microphone, phone jack termination, 1 megohm; Line, phono socket termination 250 k ohm. **Input sensitivity (for normal recording level):** 5 millivolts for Microphone, 160 millivolts for Line. **Output (each channel):** 600 ohm cathode follower output for each channel, with phono socket termination. **Output level (each channel):** 1 volt or better (at normal record level). **Bias erase frequency:** 75 kc with push-pull oscillator for symmetrical wave-form. Bias is adjustable for optimum performance. **Record level indicator (each channel):** VU type meter. **Motor:** Shaded 4-pole induction type. **Fast forward time:** Less than 100 seconds for 1200 foot reel. **Rewind time:** Less than 100 seconds for 1200 foot reel. **Reel size:** 7" or smaller. **Digital counter:** Zero reset with 3 digits. **Controls and switches:** Power switch (off-on): Rewind—forward control (rewind—neutral—forward): Function control (neutral-play-record): Push to record interlock button: record mode switch (left-right-stereo): playback level control, one for each channel, clutched type; record level control, left and right channel controls for microphone and line inputs, clutched type; meter calibrate control, one for each record level meter: Hum-Null, one for each channel: Bias-Adjust, one for each channel. **Tube and diode complement:** (6) 6EU7 tube, amplifier, (1) 12AU7 tube, bias oscillator, (2) Silicon diodes, power supply rectifiers, (4) Crystal diodes. **Power requirements:** 105-125 volts, 60 cps, 65 watts nominal. **Power supply:** Transformer-operated, half-wave voltage doubler. **Color combination:** Beige deck and coppertone control panel. **Dimensions:** Overall; 12" W x 15" D x 8" H. Mounting cutout required: 11⅛" W x 14¾" D. 7" required below deck and 1½" required above mounting surface.

Kit AD-22, mechanism and electronics for record and playback. 23 lbs....no money down, $17 mo.....**$179.95**

Kit AD-12, mechanism only (no electronics) for playback of pre-recorded 4-track stereo or mono tapes through tape head input such as in the Heathkit AA-21, AA-100 or AA-11; easily convertible to a recorder later by adding electronics. 16 lbs....no money down, $12 mo.....**$124.95**

ADA-22-1, tan carrying case for AD-12 or AD-22, 9 lbs.,.....**$37.50**

SPECIFICATIONS—Tape head: Type: 4-track. **Playback response:** ± 3 db, 40 to 15,000 cps at 7½ ips: ± 3 db, 40 to 10,000 cps at 3¾ ips (with proper NAB equalization network). **Playback output:** 2.5 millivolts ±3 db. **Gap width:** .00017". **Impedance:** High impedance, 3340 ohms. **Wow and flutter:** .2% or less at 7½ ips, .3% or less at 3¾ ips. **Tape speeds:** 7½ ips and 3¾ ips. **Motor:** Shaded 4-pole induction type. **Fast forward time:** Less than 100 sec for 1200 foot reel. **Rewind time:** Less than 100 sec for 1200 foot reel. **Reel size:** 7" or smaller. **Digital counter:** Zero reset with 3 digits. **Power requirements:** 55 watts, 117 volts 60 cps AC. **Color combination:** Beige deck and coppertone control panel. **Dimensions:** Overall; 12" W x 12" D x 8" H. 6¾" required below mounting surface: 1½" required above mounting surface.

BEST VALUE TAPE RECORDING ACCESSORIES

BULK TAPE ERASER—ONLY $22.15

Robins ME-99 bulk tape eraser for the finest recordings. Engineered to professional standards; assures distortion-free tape; reduces noise level 3 to 6 db below capability of erase heads; fast way to erase entire tape; saves wear on recorder; effective on tapes up to ½" wide; accepts 10½" reels. Size 3¾" x 5½" x 6¾". 110-120v. 50-60 cycles.
Model ADP-93, wt. 9 lbs., $33 list.
NET.....**$22.15**

ALTEC LANSING DYNAMIC MICROPHONE

Rugged, omnidirectional, moving coil, high-impedance mike for fine quality tape recordings (Ideal for use with AD-22 above and AD-72 opposite). Complete with base, slip-on stand adapter, 15' cable, plug, and tan finish to match Heathkit recorders. Response: 50-18,000 cps. 5 lbs.
ADP-72, no money dn., $5 mo.....**$49.95**

NEW SOUNDCRAFT "GOLDEN TONE" RECORDING TAPE—3 Reels for $8.75 Save 38%

10% better dynamic range; low modulation noise; free of drop-outs; no squeal problems; outperforms others; 1200', 1¼ mil acetate, splice-free. Available in three only. $4.70 list each
ADP-313, 3 lbs., **3 for**.....**$8.75**

HEATHKIT CRYSTAL MICROPHONE—ONLY $9.95

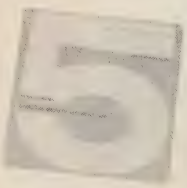
Low cost way to fine recordings, ideal for use with the new AD-72 recorder opposite. Extended response, 30-10,000 cps. Complete with mike stand adapter, lavalier neckband, and desk stand holder plus 8' cable and phone plug. Order two for stereo recordings; will fit in case below.
Model AK-1, 1 lb.....**$9.95**

NEW STEREO-4 TAPE SPLICER—ONLY $6.95

Robins Deluxe "Gibson Girl" Stereo-4 tape splicer #TS-8D splices 4-track stereo tapes without sacrificing program material on outside tracks. Cuts diagonally; trims "Gibson Girl" waist on sides of splice; see-thru windows; tape guide; "fingers"; blade centering adjustment.
Model ADP-73, wt. 1 lb. List $11.50
NET.....**$6.95**

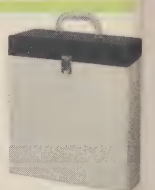
NEW TAPE HEAD DEMAGNETIZER—ONLY $5.75

Robins model HD-6 demagnetizer removes magnetization of tape heads to reduce noise level, harmonic distortion, and to improve signal to noise ratio. AC electromagnet with extended pole piece for easy access to heads; case 1½" dia.; 110 v., 60 cycles only.
Model ADP-83, wt., 1 lb. List $11.50
NET.....**$5.75**



NEW FERRODYNAMICS "BRAND 5" RECORDING TAPE—3 Reels only $5, Save 20%

New dry lubricant; new harder formulation; increased output; improved frequency response; 1200', 1½ mil acetate, splice-free. Available in three only. $2.10 list each.
ADP-123, 3 lbs., **3 for**.....**$5.00**



TAPE & RECORD CARRYING CASE From $2.95

Perfect accessories for your listening pleasure. Convenient, low cost. Sturdy, Handsome, Protective.
ADP-33. For 7" tape boxes, microphones, or 45 rpm records. Wood case covered in brown and checkered beige plastic. Clear plastic handle, brass plated hardware. 8¼" H x 8¼" W x 7" D overall. 5 lbs.....**$2.95**
ADP-43. For 12" records. Features as above. Size: 13¼" W x 13¼" H x 4½" D overall.
7 lbs.....**$3.95**

at 50% Savings

HEATHKIT®

Tape it . . . listen to it . . . wherever you are . . . with this new portable Heathkit 4-Track STEREO TAPE RECORDER . . . easy to build . . . easily worth twice its low price of $198

- Includes all amplifiers and speakers needed
- Records and plays 4-track stereo & mono tapes
- 7½ & 3¾ ips speeds
- Microphone & line inputs
- Clutched, concentric level and tone controls
- Electronic bar-type level indicators
- Dual two-way speaker systems
- Handsome factory assembled portable case with lift top lid and swing-out detachable speaker wings
- FREE head alignment tape
- Same fine mechanism as AD-12—exclusive kit version of VEGA of California tape deck

The most versatile of Heathkit tape recorders, this unit can be used wherever you are . . . just plug it into a wall socket and you're in business. Use it as an independent recorder, use to drive your hi-fi system or separate speakers. Completely self-contained, all you need are microphones and a power source. The mechanism is the same as used in the AD-12 and AD-22 opposite page. Inside are stereo pre-amplifiers and power amplifiers for recording or playback purposes, plus speaker systems. Stereo inputs accommodate microphones shown on opposite page, stereo FM tuner (no preamp needed), stereo amplifier, or other sources (line inputs are automatically cut off when microphones are plugged in). Outputs are provided for the built-in speakers and for stereo headphones . . . also may be used to drive external speakers or a separate stereo amplifier system. Controls include: "Record-Mode" switch to permit making 4-track stereo tapes or 4 individual monophonic tracks; concentric clutched level and tone controls for separate or simultaneous adjustment of channels; fast forward and rewind; record and play; record interlock to prevent accidental erasure of pre-recorded tapes; digital counter; back of panel: hum balance, level indicator adjustment; bias-adjust. Recording levels are indicated on two electronic bar-type "eyes." Each speaker wing includes a 5″ woofer and 3″ cone-type tweeter; plug-in cables permit removal of speakers from their hinges to space them up to 8′ apart for proper stereo effect. The rugged cabinet is constructed of ⅜″ plywood covered with durable, textured, pyroxylin-coated fabric in tan and ivory with nickel-plated hardware and sturdy molded handle. For complete stereo enjoyment, order this new Heathkit . . . it's an unbeatable value.

Kit AD-72, 43 lbs., no money down, $19 mo.....**$198.00**

SPECIFICATIONS—Record-play head: 4-track stereo. **Erase Head:** 4-track stereo. **Function control:** Neutral-play-record (push to record interlock button). **Wow & flutter:** .2% at 7½ ips, .3% at 3¾ ips. **Rewind-forward control:** rewind-neutral-forward. **Fast forward time:** Less than 100 sec. for 1200 feet reel. **Rewind time:** Less than 100 sec. for 1200 feet reel. **Reel size:** 7 inch or smaller. **Digital counter:** Zero set with 3 digits. **Tape speeds:** 7½ & 3¾ ips. **Motor:** Shaded 4-pole induction type. **Power response:** 7½ ips, 50 cps-15,000 cps ±3 db at 2 watts. 3¾ ips, 50 cps-10,000 cps ±3 db at 2 watts. **Harmonic distortion:** Less than 2% at full output. **Output:** Speakers (2 watts) or line. **Monitor:** Jack for stereo headphone (low impedance). **Inputs:** Line (500KΩ) or Microphones (1 megohm). **Input sensitivity:** Microphone—1 millivolt, Line-100 millivolts for normal record level. **Record level indicator:** Electronic eyebar (one per channel). **Record mode:** Left, Right or Stereo. **Level control:** Record or Play, one for each channel, clutched type. **Tone control:** Play only, one for each channel, clutched type. **Secondary controls:** Hum null, one per channel; Record Bias adjust, one per channel; Audio record level calibration, one per channel. **Tube and diode complements:** (2) 6EU7, dual triode preamplifier; (2) ECL86/GCW8, triode-preamplifier, power pentode; 12AU7, bias oscillator; (2) silicon diodes (power supply rectifier); (2) crystal diodes. **Speakers:** Two detachable wings, one woofer, one tweeter and one crossover each. Full range response. **Power supply:** Transformer operated, full wave doubler. **Power requirements:** 105-125 volts, 60 cps, 85 watts nominal. **Color combinations:** Beige deck & coppertone control panels. Luggage tan and ivory case. **Dimensions:** Overall 19½″ wide x 15¾″ deep x 9¾″ high (including speaker wings).

COMMAND 4-TRACK STEREO TAPES—SAVE 25%

List Price $7.95 . . . Your Choice, Only $5.89

The Best in 4-Track Stereo Tapes—Originals Recorded On 35mm Film. Acclaimed the finest in stereo tape recordings by critics of the music world, these Command tape recordings are unmatched for clarity and brilliance, naturalness without gimmickry . . . all achieved through the medium of recording the originals on 35mm magnetic film. The benefits are no flutter, complete separation, excellent frequency response, greater range of dynamics, and superior signal to noise ratio. Tapes are 1½ mil acetate; playback speed 7½ IPS. Add these fine quality recordings to your library at these low prices. Shipping Wt. 1 lb. Specify No. when ordering.

BRAHMS/Symphony No. 2 in D, Op. 73. William Steinberg and the Pittsburgh Symphony Orchestra. **Order No. ADP-443.**

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RAVEL/Daphnis et Chloe, Suite No. 2—La Valse/Alborada del Gracioso Pierre Dervaux/L'Orchestre Des Concerts Colonne. **Order No. ADP-343.**

RACHMANINOFF/Symphony No. 2 in E, Minor, Op. 27. William Steinberg and the Pittsburgh Symphony Orchestra. **Order No. ADP-353.**

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MOZART/Piano Sonata in F for Four Hands, K. 497—SCHUBERT/Fantasy in F Minor, Op. 103/MENDELSSOHN/Allegro Brilliant in A. Played by Leonid Hambro and Jascha Zayde. **Order No. ADP-393.**

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Stereo & Mono Amplifiers & Tuners

For good quality high fidelity monophonic FM reception, choose this low cost Heathkit AJ-31 TUNER

- Broad-band circuitry for good stereo reception with the AC-11 Converter below • 5 tube circuit with 9 tube function • Automatic frequency control • Easy to build with prealigned front end • Charcoal gray and ivory

Kit Form or Factory Assembled

AJ-31 $39.95

Here's the low cost way to add the listening beauty of high fidelity monophonic FM reception to your music system. And it's multiplex-engineered . . . just add the AC-11 Converter opposite for full FM Stereo capability. Other design features include: large, slide-rule dial and heavy, die-cast flywheel for easy tuning; switched automatic frequency control (AFC) for drift-free reception; cathode follower output 10 lbs.

Kit AJ-31, no money down, $5 mo. **$39.95**
Assembled AJW-31, $7 mo. **$69.75**

SPECIFICATIONS—Tuning range: 88 to 108 mc. **Quieting sensitivity:** 2.5 uv for 20 db of quieting 3.5 uv for 30 db of quieting; 25 uv for maximum quieting (45 db). **IF frequency:** 10.7 mc. **Image ratio:** 45 db. **AFC correction factor:** 75 kc per volt. **AM suppression:** 25 db. **Frequency response:** ±2 db 20-20,000 cps. **Harmonic distortion:** less than 1.5%, 1100 uv, 400 cycles 100% modulation. **Intermodulation distortion:** less than 1%, 60 cycles and 6 kc; mixed 4:1 1100 uv, 30% modulation. **Antenna:** 300 ohms unbalanced. **Output impedance:** 600 ohms (cathode follower). **Output voltage:** nominal .5 volt (with 30% modulation, 20 uv signal). **Power requirements:** 105-125 volts 50/60 cycle AC at 25 watts. **Overall dimensions:** 4-15/16" H x 13½" W x 6" D.

Kit Form or Factory Assembled

AC-11A $24.95

Convert your monophonic FM Tuner to stereo with this low cost deluxe Heathkit STEREO CONVERTER

- Use with AJ-31 Tuner Above or Any Good FM Tuner • Self-powered Circuit • Separation Control for Maximum Separation and Minimum Distortion • Compact Case in Choice of Colors to Match Heathkit FM Tuners • Easy to Build • Complete with three 4' Cables • 4 lbs.

Kit AC-11A, black, $5 mo. ..... **New Special-Value Price, $24.95**
Kit AC-11B, tan, $5 mo. ..... **New Special-Value Price, $24.95**
Assembled ACW-11A, black, $5 mo. ..... **Special, $39.95**
Assembled ACW-11B, tan, $5 mo. ..... **Special, $39.95**

SPECIFICATIONS—Audio frequency response: ±2 db 50 to 15,000 cps. **Subcarrier bandpass:** ±4 db 23,000 to 53,000 cps. **Channel separation:** 30 db. **Hum and noise:** –55 db (relative to 1 volt rms output). **Input impedance:** 470 K ohms. **Output impedance:** 3000 ohms each channel (cathode follower output). **Input:** MULTIPLEX (from tuner). **Input signal voltage:** .4 volt minimum (from multiplex output of FM tuner). **Outputs:** LEFT CHANNEL; RIGHT CHANNEL. **Switch and controls:** OFF-ON switch; CHANNEL SEPARATION control; LEFT CHANNEL LEVEL control; RIGHT CHANNEL LEVEL control. **Tube-diode complement:** 1—12AU7 Amplifier—Cathode Follower; 1—12AU7 Amplifier—Oscillator; 1—12AU7 Cathode Follower Output; 2—Silicon Diode Rectifiers; 2—Crystal Diode Detectors. **Power requirements:** 117 volts AC, 50/60 cps, 12 watts. **Size:** 3⅜" H x 3½" W x 10¾" D.

Bonus buy 14-watt monophonic combination PREAMPLIFIER-POWER AMPLIFIER . . . special priced Heathkit AA-161

Kit Form or Factory Assembled

AA-161 $29.95

- Big volume passes extra savings to you • 14 hi-fi-rated watts • Patented Heath Ultra-Linear® circuit • Separate bass & treble tone controls • Smart charcoal & ivory styling

Kit AA-161, 17 lbs., no money down, $5 mo. ..... **New Special-Value Price, $29.95**
Assembled AAW-161, no money down, $6 mo. ..... **New Special-Value Price, $54.95**

SPECIFICATIONS—Power output: 14 watts Heath Hi-Fi Rating; 16 watts IHFM music Power Output (2% THD, 1 kc). **Power response:** ±1 db 30-15,000 cps, 14 watts output. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 14 watts output. **Intermodulation distortion:** 2% or less at 14 watts output using 60 and 6,000 cps signals, 4:1. **Hum and noise:** mag. phono input 55 db below 14 watts; tuner and crystal phono, 65 db below 14 watts. **Input sensitivity:** For 14 watts output; mag. phono, 0.004 v at 1 kc; crystal phono, 0.2 v; tuner 0.25 v, with tone controls flat. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 10:1. **Controls:** 3-position function selector switch, bass and treble tone controls, volume control. **Tube complement:** 1-6EU7, 1-6AU6, 1-6AN8, 2-EL84/6BQ5, 1-EZ81/6CA4. **Power requirements:** 117 v, 50-60 cycles, 55 watts. **Color and finish:** Charcoal gray steel cabinet and upper front panel with ivory colored bezel and lower front panel. **Dimensions:** 5" H x 13¾" W x 10¼" D.

Enjoy High Fidelity AM Reception at this New Special-Value Price

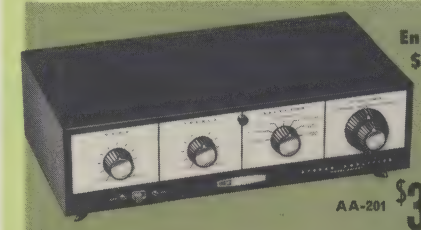
- Super-sensitive Superhet circuit with extra tuned RF stage • Fidelity switch chooses normal or maximum band width • Built-in transformer operated power supply with silicon rectifier for safety and long life • 10 kc Whistle Filter • Voltage doubler detector for lowest distortion

NEW SPECIAL-VALUE PRICE $27.95

Big volume brings you extra savings on this high fidelity AM tuner. Extra features bring you finest performance. Useable with power amps., preamps., or headphones. Charcoal & ivory. 10 lbs.

Kit AJ-21, no money down, $5 mo. . . **New Special-Value Price, $27.95**

SPECIFICATIONS—Tuning range: 550 kc to 1600 kc. **Intermediate frequency:** 455 kc. **Sensitivity (for 20 db quieting IHFM standards):** 1000 kc—8 uv. **IF bandwidth (6 db down):** NORMAL-7 kc; MAXIMUM-18 kc. **Harmonic distortion:** (750 uv 95% mod.); Less than 1%. **Hum and noise:** (500 uv-30% mod.); 40 db. **IF rejection:** 1000 kc-69 db. **Power supply:** Transformer operated (fused). **Power requirements:** 117 V AC, 50/60 cycles at 19 watts. **Dimensions:** Overall, 4-15/16" H x 13½" W x 6" D.



Enjoy the realism of stereo for just $31.95 with this Heathkit STEREO COMBINATION AMPLIFIER

- Two stereo inputs, phono and tuner or tape recorder • Separate bass and treble controls • Clutched, concentric volume controls • 7 position selector switch • Smart new black & ivory styling • Ideal for den or second system

AA-201 $31.95

Kit AA-201, 12 lbs., no money down, $5 mo. **$31.95**

SPECIFICATIONS—Channels: 2. **Power output:** 6 watts (3 w. per channel) Heath Utility Rating. **Power response:** ±1 db, 50-20,000 cps at 3 watts output per channel. **Harmonic distortion:** Less than 3%, 60-20,000 cps at 3 watts output per channel. **Intermodulation distortion:** Less than 3% at 3 watts output, 60 and 6,000 cps signals, 4:1. **Hum and noise:** 65 db below 3 watts output. **Input sensitivity:** 150 mv for 3 watts output each channel, crystal phono and tuner. **Outputs:** 4, 8 and 16 ohms. **Controls:** Dual clutched volume, ganged treble, ganged bass, 7-position selector switch, speaker phasing switch, on-off switch. **Tube complement:** 2-EL84; 2-7199; 1-EZ81. **Power requirements:** 117 v, 50-60 cycle, 75 watts. **Color and finish:** Black enamel with ivory front panel. **Dimensions:** 12¼" W x 3¼" H x 6¾" D.

Best buy 25-watt monophonic combination PREAMPLIFIER & POWER AMPLIFIER . . . Heathkit AA-181

- 25 hi-fi-rated watts • Four front-panel switch selected inputs • Separate bass and treble tone controls • Smart charcoal & ivory styling • Easy to build circuit

$42.95 AA-181

Kit AA-181, 20 lbs., no money down, $5 mo. **$42.95**

SPECIFICATIONS—Power output: 25 watts Heath hi-fi rating; 30 watts IHFM music power rating (0.7% THD @ 1 KC). **Power response:** ±1 db, 30 cps to 15 kc, at 25 watts output. **Harmonic distortion:** Less than 2% at 30 cps—15 KC and less than 0.7% at 1 KC at 25 watts output. **Intermodulation distortion:** Less than 2% at 25 watts using 60 cps and 6,000 cps signals 4:1. **Hum and noise:** Microphone—60 db or better; Mag. Phono—55 db or better; Xtal Phono—60 db or better; Auxiliary—60 db or better. **Input sensitivity:** For 25 watts output with tone controls flat—Microphone —9 mv; Mag phono —5 mv (at 1 KC); Xtal Phono —120 mv; Auxiliary —200 mv. **Outputs:** 4, 8 and 16 ohms. **Damping factor:** 9. **Controls:** 4-position selector switch, volume control, bass control and treble control with on/off switch. **Tube complement:** 2—6EU7; 1—12AU7; 2—7591; 1—5AR4; 1—Selenium bias rectifier. **Power requirements:** 117 volts 50-60 cps, 120-135 watts. **Power outlets:** 1 AC receptacle, unswitched. **Indicator:** Neon pilot light. **Color & finish:** Charcoal grey with ivory bezel and lower front panel. **Dimensions:** 13½" W x 4-15/16" H x 9½" D.

Fairchild "Compander" for greater dynamic range and realism

Kit Form or Factory Assembled

$59.95 ADP-613

This unique device offers you "expansion" or "compression" for greatest versatility. Expand stereo or mono music for greater realism and range . . . automatically increases loudness of program which was compressed during recording . . . does not alter frequency response. Compress to record programs or play background music without overloading or distortion. Completely adjustable; gain range 6 db or more; action indicators show effect. Size 8 5/16" W x 5" D x 2 5/16" H. 6 lbs.

Kit ADP-613, no money down, $6 mo. **$59.95**
Assembled ADP-603, $8 mo. **$75.00**

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These elegant cabinets were custom-designed for your new Heathkits. Choose from hand-rubbed walnut, mahogany, or unfinished hardwood. They are factory-built, ready to use.

Ⓐ Double Door Equipment Cabinet

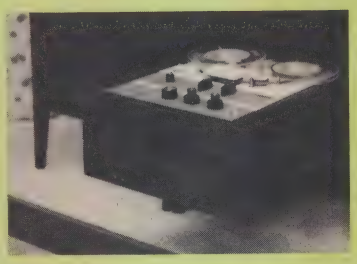
EQUIPMENT ACCOMMODATIONS AND SIZES—Cabinet, overall: 36" W x 32⅜" H x 19" D. **Changer compartment:** 17" W x 15¾" D, mounting board is uncut and can be adjusted in height to accept AD-82, AD-92, AD-102, or ADP-63 record equipment (but not ADP-21), and also AD-12 and AD-22 tape equipment; lid has adjustable friction-loaded support. **Record-tape recorder compartment:** 14½" H x 17" W x 17" D. for record storage; space is convertible with accessory sliding drawers below to accommodate Heath AD-12 and AD-22 tape recorders or AD-92 and AD-102 record changers. **Shelf compartments:** (2) each 17" W x 6" H x 17" D. (inside shelf 14" deep); either shelf accepts any Heath Stereo or Mono tuner, Stereo or Mono pre-amplifier or stereo or mono combination amplifier. **Power amplifier compartment:** 8¾" H x 17" W x 15⅛" D. inside; accepts Heath AA-111 or AA-121 for stereo or any Heath monophonic amplifier. 85 lbs.

Model AE-20U, unfinished, $8 mo. **$79.95**
Model AE-20W, walnut, $10 mo. **$99.50**
Model AE-20M, mahog., $10 mo. **$99.50**

Ⓑ 12"-15" Speaker Cabinets

Perfect match for AE-20 center cabinet. Accepts either 12" or 15" speakers (page 28) plus optional 3⅜" x 10 3/16" slot for tweeters. Tube vented design. Size: 18½" W x 19" D x 32⅜" H. Ready for speaker installation. 50 lbs.

Model AE-40U, unfinished, $5 mo. **$37.95**
Model AE-40W, walnut, $5 mo. **$44.95**
Model AE-40M, mahogany, $5 mo. **$44.95**



Matching Record Changer & Tape Recorder Drawers From $16.95

These newly-designed drawers will fit either the AE-20 center cabinet or the new AE-12 "apartment-size" cabinet. Changer drawers are pre-cut for Heathkit changers AD-102 & AD-92; tape recorder drawers are uncut, but will accept Heathkit AD-12 & AD-22 decks.

Model AEA-12-1, unfin. changer drawer, precut, 11 lbs. **$16.95**
Model AEA-12-2, walnut changer drawer, precut, 11 lbs. **$17.95**
Model AEA-12-3, unfin., uncut recorder drawer, 16 lbs. **$18.95**
Model AEA-12-4, walnut, uncut recorder drawer, 15 lbs. **$19.95**

Ⓒ Space-Saving, Money-Saving Equipment Center

Custom-made for Heathkits. Single Door; two shelves (6⅛" H x 17⅛" W x 16¾" D) hold any Heathkit stereo or mono tuner and any stereo or mono combination amplifier.

Bottom compartment accepts changer or recorder drawers shown below (9½" H x 17⅛" W x 17¼" D) to contain AD-102 or AD-92 Changers (page 21) or AD-12 or AD-22 tape decks (page 22). Smart, compact, excellent value! 50 lbs.

Model AE-12U, unfinished, $6 mo. **$58.50**
Model AE-12W, walnut, $7 mo. **$68.50**

Ⓓ Low Cost 8"-12" Speaker Cabinets

Complement AE-20 or AE-12 center cabinets. Accepts either 8" or 12" speakers (page 28) plus optional 3⅜" x 10 3/16" slot for horn tweeters. Tube vented design. Size: 15" W x 19" D x 32⅜" H. Ready for speaker installation. 44 lbs.

Model AE-30U, unfinished, $5 mo. **$31.95**
Model AE-30W, walnut, $5 mo. **$38.95**
Model AE-30M, mahog., $5 mo. **$38.95**

SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK

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$ 20.01-30	3	5	170.01-180	18	17
30.01-40	4	5	180.01-190	19	18
40.01-50	5	5	190.01-200	20	19
50.01-60	6	6	200.01-210	21	20
60.01-70	7	7	210.01-220	22	21
70.01-80	8	8	220.01-230	23	22
80.01-90	9	9	230.01-240	24	22
90.01-100	10	10	240.01-250	25	23
100.01-110	11	11	250.01-260	26	24
110.01-120	12	11	260.01-270	27	25
120.01-130	13	12	270.01-280	28	26
130.01-140	14	13	280.01-290	29	27
140.01-150	15	14	290.01-300	30	28
150.01-160	16	15	†Over $300.00 write for details		

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NOTE: Time payment agreement cannot be accepted from persons under 21 years of age. If you are under 21, have this form filled out by a person of legal age, regularly employed or engaged in business. He can make the purchase for you, and will be responsible for payment.

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Enter Date_____ Sign Here_____

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WIFE'S NAME_____ Names of Children and ages_____ Military Serial No. (if serviceman)_____

Residence_____ City_____ State_____ How Long_____

☐ Own or Buying ☐ Rent ☐ Live with Parents No. of Rooms_____ Paid Monthly $_____ Phone No._____

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Previous Landlord_____ Address_____

Employed by_____ Street_____ City_____ State_____

(If self-employed—Type of Business)

Position_____ How Long_____ Dept. or Badge No._____ Salary $_____

Previous Employer_____ Street_____ City_____ State_____ How Long_____

Wife's Employer_____ Street_____ City & State_____

Position_____ How Long_____ Dept. or Badge No._____ Salary $_____

Other Income—Give Details_____ Total Family Income $_____

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to 2 lbs.	$.24	$.33	$.35	$.39	$.45	$.51	$.58	$.64	11 lbs.	.42	.77	.89	1.05	1.35	1.67	2.02	2.34
3 lbs.	.26	.38	.41	.47	.55	.64	.74	.83	12 lbs.	.44	.81	.95	1.12	1.45	1.79	2.18	2.52
4 lbs.	.28	.43	.47	.55	.65	.77	.90	1.02	13 lbs.	.46	.85	1.01	1.19	1.55	1.91	2.34	2.70
5 lbs.	.30	.48	.53	.63	.75	.90	1.06	1.21	14 lbs.	.48	.89	1.07	1.26	1.65	2.03	2.50	2.88
									15 lbs.	.50	.93	1.13	1.33	1.75	2.15	2.66	3.06
6 lbs.	.32	.53	.59	.70	.85	1.03	1.22	1.40	16 lbs.	.52	.97	1.18	1.40	1.85	2.27	2.81	3.24
7 lbs.	.34	.58	.65	.77	.95	1.16	1.38	1.59	17 lbs.	.54	1.01	1.23	1.47	1.95	2.39	2.96	3.42
8 lbs.	.36	.63	.71	.84	1.05	1.29	1.54	1.78	18 lbs.	.56	1.05	1.28	1.54	2.05	2.51	3.11	3.60
9 lbs.	.38	.68	.77	.91	1.15	1.42	1.70	1.97	19 lbs.	.58	1.09	1.33	1.61	2.15	2.63	3.26	3.78
10 lbs.	.40	.73	.83	.98	1.25	1.55	1.86	2.16	20 lbs.	.60	1.13	1.38	1.68	2.25	2.75	3.41	3.96

IMPORTANT: Any parcel post rate changes enacted since February, 1960 are not reflected in this table. If such changes have taken place, check with your Postmaster, and send enough postage to cover new rate.

HOW TO SEND MONEY SAFELY

It is best to remit by money order, bank draft, cashier's check, Western Union Telegraph money order, or your own personal check. Avoid sending coin or currency if possible, but if you must remit cash, wrap carefully and secure it to your order. Then send by registered mail if you want protection from loss in the mails.

INCLUDE MONEY FOR POSTAGE

with your orders as we must pay postage on parcel post packages before we can send your merchandise.

Best Quality, Best Buy Speaker

A Heathkit Exclusive . . . The Famous ACOUSTIC RESEARCH AR-2A SPEAKER SYSTEM in Money-Saving Kit Form!

MEMBER INSTITUTE OF HIGH FIDELITY MANUFACTURERS INC.

- **All speakers are genuine AR-2A units (Super tweeter for extended high frequency response) (Two special 5" cross-fired mid-range speakers) (10" acoustic suspension bass woofer)**
- **Built-in crossover networks—high frequency level controls**
- **Preassembled cabinets available in finished walnut or unfinished white hardwood**

AS-2AU $89.95

Something new has been added! . . . the famed Acoustic Research speaker system now includes a specially designed super tweeter . . . to extend its already remarkable performance to a full 40 to 20,000 cps response. Heathkit, sole kit licensee of Acoustic Research, Incorporated, now proudly brings you this outstanding speaker system in money-saving kit form.

The Acoustic Research speaker system has long been accepted as one of the most praiseworthy speaker systems in the world for high fidelity sound reproduction. The Acoustic Suspension principle employs a freely suspended bass woofer, which uses the "cushion" of air inside an air-tight cabinet as a "spring". In conventional loudspeakers the moving cone is mounted on mechanical suspensions which act as springs to return the cone to its original position. The imperfect quality of these springs is the greatest single source of speaker distortion. By using the sealed-in air of the cabinet as a spring, near-perfect characteristics are obtained which result in clean, clear bass response with remarkably low harmonic distortion.

Assembly is simple, you need only mount the speakers in the preassembled cabinet, wire the simple crossover networks and fill the cabinet with the fiberglass furnished. Tweeter and mid-range speakers are individually controlled by separate level controls on the back panel. Enjoy the advantages of acoustic suspension sound in your stereo/hi-fi system. Order yours today! 40 lbs.

Kit AS-2AW (finished walnut) . . . no money down, $10 mo. **$99.95**
Kit AS-2AU (unfinished white hardwood) . . . $9 mo. **$89.95**

SPECIFICATIONS—Frequency response: ±5 db, 40 to 20,000 cps. **Impedance:** 8 ohms. **Recommended amplifier power:** 20 watt minimum. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet; Mid-range, two 5" cone units, in dispersed array, 2.15 oz. Alnico 5 magnets; Super-tweeter, 1¾" dome-type construction. **Crossover:** L-C network, 2000 & 7500 cps. **Controls:** Individual levels for tweeter and mid-range speakers. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled ¾" furniture-grade plywood. **Dimensions:** 13½" H x 24" W x 11¾" D.

USE HEATH'S EASY TIME PAY!

No money down . . . up to 18 months to pay! Order the kits you need now . . . it's easy and convenient. See order blank for complete details.

HEATH-RECOMMENDED FACTORY-ASSEMBLED SPEAKER SYSTEMS

Acoustic Suspension Speaker Systems

AR-3—12" woofer with 3¼ lb. magnet; 2" mid-range dome speaker with 3¼ lb. magnet; and 1⅜" dome tweeter. Crossovers @ 1 kc and 7.5 kc; level controls; ±2 db, 38-20,000 cps; needs 25 watts power; 4 ohms; 14 x 25 x 11⅜"; 60 lbs.

ASP-23-OW, oiled walnut. **$225.00**

(Also available in mahogany or natural birch at $216.00, in walnut, cherry, korina or teak at $225.00, and in unfinished pine at $203.00)

AR-2A—10" woofer, two 5" mid-range speakers, 1⅜" super tweeter; crossovers @ 2 kc and 7.5 kc; level controls; 30-20,000 cps; needs 20 watts power; 8 ohms; 13½ x 24 x 11½" D; 38 lbs.

ASP-13-OW, oiled walnut. **$128.00**

(Also available in mahogany or natural birch at $122.00, in walnut, cherry, korina or teak at $128.00, and in unfinished pine at $109.00)

HARTLEY Magnetic Suspension Speaker System

Hit of the New York High Fidelity Show, the award winning Model 220MS magnetic suspension 10" speaker with Tri-Polymer cone and cast alum. frame; 16-20,000 cps; 5¾ lb. magnet; 8 ohms; mounted in Holton "A" cabinet of oiled walnut, acoustically treated, fully enclosed; size 34" H x 24" W x 13" D.

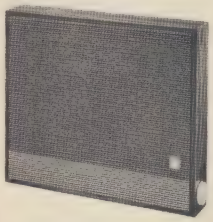
ASP-73, 85 lbs., no money dn., $23 mo. **$245.00**

JENSEN TR-9 "Slim-Shelf" System

3-way, 3-speaker system; 10" woofer, 8" mid-range, E-10 dome ultra tweeter; 30 cps to beyond audibility; crossovers @ 600 and 4,000 cps; level control for high frequencies; 25 watt rating; 8 ohms; in oiled walnut cabinet 13½" H x 23¾" W x 5⅜" D.

ASP-63, 28 lbs., no money dn., $9 mo. **$89.50**

JENSEN X-20 "Slim-Compact" System



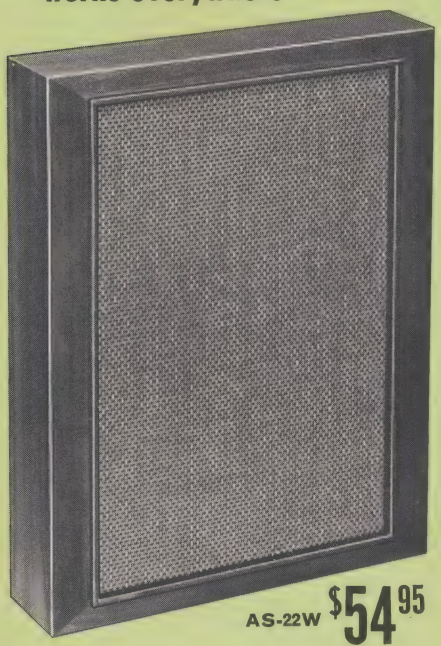
2-way, 3-speaker system; special shallow 5¾" woofer and two tweeters; 65-14,000 cps; crossover 4 kc; vol. control on side; 6-watt rating; 8 ohms; in oiled walnut cabinet 12⅞" H x 15⅜" W x 2⅜" D; ideal for wall or shelf mounting, desk or table.

ASP-53, 11 lbs., no money dn., $5 mo. **$39.95**

Systems by Heathkit®

HEATHKIT®

The Audiophile's answer to the decorator's dilemma . . . This Heathkit SPEAKER SYSTEM "Goes" anywhere, works everywhere



AS-22W $54.95

- **Only 5 inches deep**
- **Installs on wall, shelf or floor**
- **3-speaker system—tube-tuned bass reflex**

For installation versatility in every decor, choose the new Heathkit "Profile" . . . a slim, trim 3-way speaker system that is just 5 inches deep to fit anywhere. Stand it on the floor, set it vertically on a table or bookshelf, or hang it like a picture on the wall!

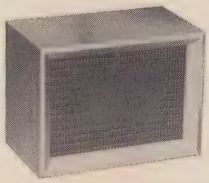
The AS-22 is the best sounding flat speaker available anywhere. A special inverted-type 10" woofer offers excellent low frequency reproduction up to the 2250 cycle crossover point. Mid-range and high frequencies are reproduced by the 6" and 3½" cone-type, closed-back speakers designed to prevent woofer back-pressure from causing distortion at mid-range and high frequencies.

The factory assembled cabinet is ready for speaker mounting; includes wall hangers and felt feet for mounting on any side; available in walnut or unfinished white wood ready for finishing. 34 lbs.

Kit AS-22U, unfinished . . . no money down, $5 mo. **$49.95**

KIT AS-22W, walnut . . . no money down, $6 mo. **$54.95**

SPECIFICATIONS—Frequency response: ±5 db, 55 to 12,500 cps. **Impedance:** 8 ohms. **Recommended amplifier power:** 10 to 25 watts. **Enclosure:** Tube tuned bass reflex. **Speakers:** Woofer, 10" inverted design, 1.1 lb. Alnico 5 magnet; Mid-range, 6" closed back, 2.15 oz. Alnico 5 magnet; Tweeter, 3½" closed back, 2.15 oz. Alnico 5 magnet. **Crossover:** Capacitive, 2250 cps. **Cabinet:** Factory assembled furniture-grade solid wood and ¾" thick veneer plywood. **Dimensions:** 19½" W x 25" H x 5" D.



Lowest Cost Wide Range Speaker System

- **6" x 9" extended range dual-cone speaker**
- **Factory assembled walnut or unfinished cabinets**
- **70-16,000 cps response**

Use this low-cost speaker system in a variety of ways . . . as an economy speaker for an extra music system . . . as an extension speaker . . . or as a center fill-in speaker for a stereo system. It has surprising response and good power handling capability. Easy to build, just install the speaker in the assembled cabinet and connect the two leads. 8 lbs.

Kit AS-41U, unfinished **$10.95**
Kit AS-41W, walnut finish **$12.95**

SPECIFICATIONS—Frequency response: 70 to 16,000 cps. **Impedance:** 8 ohms. **Capacity:** 12 watts. **Enclosure:** Rear vented box. **Speaker:** 6" x 9" extended range dual cone, 6.8 oz. Alnico 5 magnet. **Cabinet:** Factory assembled, furniture-grade ½" plywood. **Dimensions:** 8" H x 11" W x 6½" D.

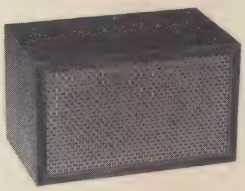
Lowest Cost Acoustic Suspension Speaker System

- **10" acoustic suspension woofer**
- **Two 3½" tweeters**
- **Factory assembled cabinets in three finishes**

Easy to drive, easy to buy, this Heathkit AS-10 is a remarkable value in acoustic suspension speaker systems! Designed under exclusive kit license from Acoustic Research, Inc., it offers all the distortion-reducing properties this type system provides. Easy to build. 40 lbs.

Kit AS-10U, unfinished, $6 mo. **$59.95**
Kit AS-10W, walnut, $7 mo. **$64.95**
Kit AS-10M, mahogany, $7 mo. **$64.95**

SPECIFICATIONS—Frequency response: ±5 db, 30 to 15,000 cps. **Impedance:** 16 ohms. **Recommended amplifier power:** 10 to 40 watts. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, 1.0 lb. Alnico 5 magnet; Tweeter, two 3½" cone units in dispersed array, 1.47 oz. Alnico 5 magnets. **Crossover:** L-C network, 2250 cps. **Control:** High frequency level. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled ¾" furniture-grade plywood. **Dimensions:** 13½" H x 24" W x 11½" D.



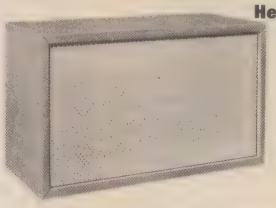
World's Smallest Two-Speaker System

- **Special woofer**
- **3" tweeter**
- **Factory assembled cabinet in walnut, mahogany, or unfinished**

Engineered for wide-range response from a very small enclosure, this miniature system uses a high-compliance woofer with mass-loaded cone carefully matched to the cabinet for unusual bass response, plus a 3" closed-back tweeter. Easy to build with assembled cabinet. 8 lbs.

Kit AS-81U, unfinished **$17.50**
Kit AS-81W, walnut **$19.95**
Kit AS-81M, mahogany **$19.95**

SPECIFICATIONS—Frequency response: ±5 db, 70 to 14,000 cps. **Impedance:** 8 ohms. **Capacity:** 6 watts. **Enclosure:** Infinite baffle. **Speakers:** Woofer, 5½" mass-loaded cone. 10 oz. Syntox 6 magnet; Tweeter, 3" cone-type, .53 oz. Alnico 5 magnet. **Crossover:** Capacitive, 4000 cps. **Cabinet:** Factory assembled, furniture-grade ½" plywood. **Dimensions:** 6½" H x 10¾" W x 6-3/16" D.



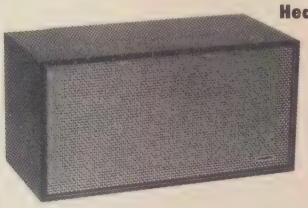
Heathkit's Version of the Famous AR-2

- **10" acoustic suspension woofer**
- **Two 5" tweeters**
- **Factory assembled cabinets**

Add the advantages of acoustic suspension sound to your music system with this low cost version of the famous AR-2, manufactured under exclusive kit license from Acoustic Research, Inc. Extended bass response and extremely low harmonic distortion. Easy to build. 44 lbs.

Kit AS-2U, unfinished, $8 mo. **$72.95**
Kit AS-2M, mahogany fruitwood finish, $8 mo. **$79.95**

SPECIFICATIONS—Frequency response: ±5 db, 40 to 15,000 cps. **Impedance:** 8 ohms. **Recommended amplifier power:** 20 to 40 watts. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet; Tweeter, two 5" cone units in dispersed array, 2.15 oz. Alnico 5 magnets. **Crossover:** L-C network, 2,000 cps. **Control:** High frequency level. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled ¾" furniture-grade plywood. **Dimensions:** 24" W x 13½" H x 11⅜" D.



Heathkit Best-Seller Speaker System

- **8" woofer**
- **Compression-type horn tweeter**
- **Factory assembled cabinets**

Thousands have purchased this fine speaker system . . . check its specifications and price and you'll see why! Rotatable tweeter mounting board provides proper dispersion angle; exceptionally smooth, clean response. 27 lbs.

Kit AS-51U, unfinished, $5 mo. **$39.95**
Kit AS-51W, walnut, $5 mo. **$46.95**
Kit AS-51M, mahogany, $5 mo. **$46.95**

SPECIFICATIONS—Frequency response: ±5 db, 50 to 12,000 cps. **Impedance:** 16 ohms. **Capacity:** 25 watts. **Enclosure:** Ducted port bass reflex. **Speakers:** Low frequency, 8" Jensen 6.8 oz. Alnico 5 magnet; High frequency, Jensen compression driver with exponential horn 4.7 oz. Alnico 5 magnet. **Crossover:** Capacitive, 1600 cps. **Control:** High frequency level. **Cabinet:** Factory assembled, furniture-grade ½" plywood. **Dimensions:** 11½" H x 23" W x 11¾" D.

World-Famous Heathkit "Legato" Speaker System

- **Two high compliance Altec Lansing 12" woofers • Special-design Altec Lansing exponential horn and high frequency driver • Exceptionally smooth response from 30-22,000 cps • Highly efficient, drives with as little as 3 watts • Components available separately or with handsome cabinet styled to match Heathkit cabinets shown on page 28 • Unmatched sound, quality, and value**

Kit AS-21W, walnut, 132 lbs., no money dn., $22 mo. **$239.95**
AS-31, everything except cabinet, 53 lbs., $18 mo. **$184.95**

SPECIFICATIONS—Frequency response: 30 to 22,000 cps. **Impedance:** 16 ohms. **Capacity:** 30 watts. **Enclosure:** Modified infinite baffle. **Speakers:** Low frequency, two Altec Lansing 12" high compliance woofers, 1½ lb. magnets; High frequency, one Altec Lansing 800 cycle exponential horn and driver, .53 lb. magnet. **Crossover:** 800 cycle constant K type, assembled. **Control:** high frequency shelving. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled furniture-grade ¾" plywood. **Dimensions:** 32⅜" H x 32" W x 19" D.

Your Best Buy In Sound

SAVE UP TO 50% ON HEATH-RECOMMENDED SPEAKERS

A Heath 8" Dual Cone

Lowest cost! Whizzer cone plus woofer, one voice coil. Specs: 8 watts, 8 ohms, 60-15,000 cps, resonance 75 cps.

Model US-4, 2 lbs..... **$5.95**

B Oxford 8" x 12" "Hidden Magnet" Dual-Cone Speakers

Ceramic Magnet is mounted between basket and cone for shallow depth with conventional design that permits dual cones; has solderless binding posts, baked enamel wrinkle gray finish.

Model ASP-93, 8" speaker, 10 watts, 8 ohms, 55-18,000 cps, resonance 70-80 cps, 1" v.c., 6 oz. magnet, 2⅛" depth; 3 lbs..... **$5.95**

Model ASP-103, 12" speaker, 15 watts, 8 ohms, 40-14,000 cps, resonance 65-75 cps, 1¼" v.c., 12 oz. magnet, 3½" depth, 5 lbs..... **$9.95**

C Heath 12" Dual-Cone

Big value! Whizzer cone plus low frequency cone with one voice coil. Specs: 14 watts, 8 ohms, 50-12,000 cps, resonance 55-65 cps.

Model US-2, 5 lbs..... **$11.95**

D E-V MC-8 8" Dual-Cone

Just 3-3/16" deep, die-cast frame, ceramic magnet, two cones, one voice coil. Specs: 12 watts program, 8 ohms, 50-13,000 cps, resonance 65-85 cps.

Model ASP-83, 5 lbs..... **$14.70**

E Jensen K-80A 8" Coaxial

Electrically and acoustically independent woofer and cone-type tweeter. Specs: 12 watts, 16 ohms, 50-14,000 cps, resonance 65 cps ±10, ½ lb. magnet, built-in crossover.

Model ASP-33, 5 lbs..... **$17.75**

F Heath 12" Coaxial

True co-ax with separate woofer and tweeter with built-in crossover. Specs: 15 watts, 16 ohms, 50-15,000 cps, resonance 65-75 cps.

Model US-3, 6 lbs..... **$19.95**

G Jensen DX-120 12" Dual-Cone

Two cones driven by one voice coil, mechanical crossover at 4,000 cps. Specs: 20 watts, 16 ohms, 40-13,000 cps, resonance 60 cps ±10, 1 lb. magnet.

Model ASP-43, 8 lbs., no money dn., $5 mo..... **$27.50**

H Altec 755C 8" Speaker

Compact! Only 2¼" deep. Wide 90° angle of distribution. Works well with 1½ cubic ft. enclosure. Specs: 15 watts, 8 ohms, 40-13,000 cps, resonance 45 cps.

Model AS-20, 5 lbs., $5 mo..... **$29.95**

I Electro-Voice LT-12 12" 3-Way

3-in-1! H-F driver, 12" woofer, and mid-range cone. Built-in crossover network, 3-position brilliance switch, rigid die-cast frame. Specs: 20 watts, 8 ohms, 40-18,000 cps, resonance 55 cps.

Model ASP-12, 9 lbs., $5 mo..... **$31.36**

J Electro-Voice SP-12B 12" Dual-Cone

Popular! Uses whizzer cone plus high compliance woofer driven by 2" voice coil. Mech. crossover, 4500 cps. Uses ceramic magnet. Specs: 20 watts, 16 ohms, 40-13,000 cps, resonance 40-50 cps.

Model AS-30, 14 lbs., $5 mo..... **$36.75**

K Electro-Voice SP-15B 15" Dual-Cone

Move up to a big one! Uses principle of whizzer and high compliance woofer from one 2" voice coil. Mech. crossover, 3500 cps. Uses ceramic magnet. Specs: 15-20 watts, 16 ohms, 30-13,000 cps, resonance 38 cps.

Model ASP-71, 16 lbs., $5 mo..... **$45.08**

L Jensen H-222 12" Coaxial

Highly popular. Uses independent tweeter with compression driver, built-in 2000 cps crossover network and 6-cell exponential horn. Includes ST-946 high freq. level control. Specs: 25 watts, 16 ohms, 30-15,000 cps, resonance 60 cps.

Model ASP-61, 12 lbs., $7 mo..... **$62.50**

M Jensen H-223F 12" 2-Way

Quality! Two separate speakers; "Flexair" woofer and concentric reentrant compression driver tweeter. L-C crossover at 2000 cps. Wired-in tweeter balance control. Specs: 30 watts, 16 ohms, 20-15,000 cps, resonance 25 cps.

Model AS-40, 14 lbs., $8 mo..... **$72.50**

N Altec 605A 15" Duplex

Standard of excellence! Two independent speakers in one frame. Woofer has 3" edge-wound copper voice coil; tweeter has 1¾" alum. voice coil and exponential horn. Uses 1600 cps crossover network with adjustable HF shelving control. Specs: 35 watts, 16 ohms, 20-22,000 cps, resonance 25 cps.

Model AS-70, 36 lbs., $17 mo..... **$177.00**

O Special Speaker Component Set . . . for Custom Installations

Ideal for do-it-yourself wall installations! Set includes a special design 8" high compliance Woofer by Jensen for superb bass response; 3½" Tweeter and R-C crossover network. Overall response is ±5 db, 30-16,000 cps. Complete with wiring instructions and plans for building alternate speaker enclosure. 6 lbs.

AS-42 Speaker Set..... **$17.50**

Stereo Headphones For Private Listening

A Jensen HS-1L Stereo Headset

Professional! Special design, matched moving coil units with fluid damping. Lightweight nylon cases. Contoured cushions. Stainless steel yokes. 2 lbs.

Model ADP-82..... $22.50

SPECIFICATIONS—Drivers: High-compliance, curvilinear, moisture resistant diaphragm. Aluminum voice coil, sintered magnetic circuit with efficient Alnico magnet. **Frequency range:** 20-15,000 cycles. **Power requirements:** Comfortable listening with 1/10 milliwatt. **Impedance:** 8-ohms each channel (may be connected to 4, 8 or 16 ohm amplifier outputs). **Sensitivity:** 95 db sound pressure level for 1 milliwatt input. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 8 ft. long.

B Telex ST-11 Stereo Headset

Special design for wide-range reproduction and improved bass. Lightweight. Comfortable foam rubber muff with deep cavity design. Stainless steel headband and yokes. 2 lbs.

Model ADP-92..... $23.92

SPECIFICATIONS—Driver element: Dynamic. **Sensitivity:** better than 95 db. **Frequency response:** 16-15,000 cps. **Impedance:** 8 ohms for use with 3 to 16 ohm sources. **Power input:** 15 milliwatts, 1 watt maximum. **Cord:** 4-wire 12 ft. long with spade terminals. **Color:** Tan and brown.

C Roanwell Stereo Headset

Identical driver units being used in space flights. Special moving coil drivers. Soft cushions for perfect seal. 4-wire design eliminates phasing problems. 2 lbs.

Model ADP-102, no money down, $5 mo..... **$37.50**

SPECIFICATIONS—Drivers: Moving coil, dynamic. **Sensitivity:** 105 db @ 1000 cps (ref. 0 db=.002 dynes per sq. centimeter with input of 1 milliwatt). **Frequency response:** 30-18,000 cycles. **Distortion:** Less than 3% with 100 milliwatt input. **Impedance:** 16 ohms. **Connectors:** Spade terminals. **Cord:** 4-wire cable, 12 ft. long.

SAVE 5% ON HEATHKIT STEREO/HI-FI SYSTEMS—ORDER PROGRAM SOURCE, AMPLIFIER, & SPEAKER; DEDUCT 5% ON ORDER BLANK

Save On Ham Gear With HEATHKIT

Beginner's HAM BAND RECEIVER at New Special-Value Price

HR-10 $79.95

- Covers 80 through 10 meters
- Tunes SSB, AM, & CW signals
- Prebuilt, aligned coil/bandswitch assembly
- Lattice-type crystal filter for high selectivity
- RF stage of extra sensitivity
- 7 tube superheterodyne circuit
- Style-mate to the DX-60 Phone & CW Transmitter

Whether you are just entering the fascinating hobby of amateur radio or are an old-timer with thousands of QSL cards, you'll find the Heathkit HR-10 amateur receiver a special value. Ideal for the first receiver or as a standby unit, this fine unit features amateur band coverage only for maximum performance where it counts. The seven-tube superheterodyne circuit features an RF stage for high sensitivity and a half-lattice crystal filter for excellent selectivity. The carefully engineered diode detector and beat frequency oscillator assures good AM, CW, or SSB reception. Tuning is easy with the big, six inch lighted dial. The dial calibration control assures accurate settings at all times (optional plug-in 100kc crystal calibrator is also available). The "S" meter permits peak tuning of any signal. Front panel controls include antenna trimmer, bandswitch, tuning, BFO tuning, RF gain, AF gain, BFO on-off, AVC on-off, and ANL on-off. 8-ohm speaker jack and accessory socket on rear apron.

Kit HR-10 . . . 20 lbs. . . . no money down, $8 mo. . . . . **now only $79.95**

Kit HRA-10-1, Plug-in 100 kc Crystal Calibrator. 1 lb. **$8.95**

SPECIFICATIONS—Frequency coverage: 80 through 10 meters. **IF frequency:** 1681 kc. **Sensitivity:** 1 uv for 10 db signal-to-noise ratio. **Image rejection:** 40 db or better. **Selectivity:** 3 kc at 6 db, 9 kc at 40 db. **Input impedance:** 50 to 75 ohm coaxial. **Audio output impedance:** 8 or 500 ohm. **Tube complement:** 6BZ6, (2) 6EA8, 6BA6, 6BJ7, 6EB8, 6X4. **Power requirements:** 117 volts AC, 50/60 cycles, 50 watts. **Dimensions:** 13¾" W x 11½" D x 6½" H.

"Novice" or "General" . . . You'll like the performance & price of the Heathkit HX-11 CW TRANSMITTER

- 50-watt plate power input
- Built-in low pass filter
- Single knob bandswitching
- Neutralized final amplifier

HX-11 $43.50

For clean CW on 80 through 10 meters, simply, efficiently, and economically, put this Heathkit HX-11 on the air. Just three tubes . . . a single 6DQ6A final amplifier with full 50-watt plate power input . . . a 6CL6 oscillator with crystal socket behind an easy-access metal pull-out plug on the side of the cabinet (usable with external VFO with adapter plug) . . . 5U4GB rectifier. Features include single-knob bandswitching, switched antenna relay power, pi network coaxial output coupling, built-in low pass filter, and meter for final grid and plate.

Kit HX-11, 18 lbs., no money dn., $5 mo. **$43.50**

SPECIFICATIONS—RF power input: 50 watts CW. **Output impedance:** 50-600 ohm (non-reactive). **Output Coupling:** Pi network. **Operation:** Crystal—external VFO. **Low pass filter cutoff frequency:** 34 MC. **Band coverage:** 80, 40, 20, 15, 10 meters. **Tube complement:** 5U4GB rectifier, 6CL6 oscillator, 6DQ6A final amplifier. **Power requirements:** 117 volts AC, 60 cycles, 150 watts. **Dimensions:** 13" W x 8½" H x 7" D.

Beginner's PHONE & CW TRANSMITTER . . . 90 watts on 80 through 10 meters at Special Value Price

$79.95 DX-60

- May be run at reduced power for novice operation
- Neutralized 6146 final
- Built-in low pass filter
- Grid block keying
- Easy access to crystal sockets
- Style-mate to the HR-10 Receiver

Attention beginning amateur radio ops! Compare the Heathkit DX-60 with any other unit on the market in its price and power class . . . you'll find it can't be matched for quality, performance, and dependability. Top quality components, clean, rugged construction, added performance features, and its ability to run at reduced power make it an ideal first transmitter for the novice. Check these important points: low-pass filter to reduce harmonic radiation for clean signal with minimum TVI; neutralized, shielded final amplifier for stability; grid block keying for excellent keying characteristics; single knob bandswitching for convenience; switch selection of four crystal positions or an external VFO; pi network coaxial output coupling for unbalanced 50 to 75 ohm antennas; panel meter for final grid and plate tuning; pilot lights for AC power and High Voltage; front panel connector for microphone and jack for key. Put this FB performer in your shack now at this new low price.

Kit DX-60, 25 lbs., no money down, $8 mo. . . . . **now only $79.95**

SPECIFICATIONS—Power input: 90 watts peak, carrier controlled phone or CW. **Output impedance:** 50-72 ohm (coaxial). **Output coupling:** Pi-network. **Operation:** CW or AM phone-crystal or VFO control. **Band coverage:** 80 through 10 meters. **Power requirements:** 105-125 V 50/60. **Dimensions:** 13¾" W x 11½" D x 6½" H.

Learn Amateur Radio this Easy, Low-Cost Way

- Four ARRL handbooks, "Gateway To Amateur Radio"
- Set of three special code records
- Code practice oscillator with key

$15.95 HDP-22

Get started in the international hobby of amateur radio . . . make new friends the world over . . . learn about radio . . . develop a hobby that provides a lifetime of fun. This course includes 4 ARRL books, "How To Become A Radio Amateur," "Learning The Radio-Telegraph Code," "Radio Amateur's License Manual," "Operating An Amateur Radio Station;" 3 records using the "word" method of teaching code; Heathkit CO-1 Code Oscillator with telegraph key.

HDP-22 Amateur Starter Group, 7 lbs., Save $3.00 . . . . . **$15.95**

HDP-32 Code Records . . . 2 lbs. **$9.50**

HDP-42 ARRL books (4) . . . 1 lb. **$1.50**

Kit CO-1 Oscillator plus key . . . 2 lbs. **$7.95**

Go SSB with Heathkit®

Heathkit HX-30 6-Meter SSB TRANSMITTER

THROUGH HEATH NEW RESEARCH

HX-30 $189.95

- **Operates SSB upper/lower sideband, AM & CW**
- **Employs heterodyne system to output frequency**
- **10 watts P.E.P.** • **50-54 mc in four 1 mc segments**
- **Built-in VFO or crystal control, VOX and anti-trip circuitry**
- **Specially designed for fast, easy assembly**

Compare the features, compare the price, and you'll choose the new HX-30 for single sideband on six! Completely self-contained, this versatile unit is capable of three types of transmission . . . SSB, AM, and CW. And it is a complete station, combining all the features you need to go on the air, for less than the cost of a transmitter-converter . . . just plug it into 117 VAC, connect the microphone and antenna and you're in operation! Features include a built-in VFO (with adjustable temperature compensation) that permits any 1 mc coverage of six meters with appropriate heterodyne crystal. Two switch-selected crystal positions are provided for net and MARS use. VOX and anti-trip circuitry is used for telephone type of operation. Push-to-talk circuitry is also provided. SSB generation is by the phasing method. An audio filter in the speech circuits offers improved sideband suppression and extra signal "punch". Build it now . . . it's easy with four circuit boards and three cabled wiring harnesses.

Kit HX-30, 50 lbs., no money down, $18 mo.....**$189.95**

SPECIFICATIONS—Frequency coverage: 50 to 54 mc in four 1 mc segments. (heterodyne crystal for 50 to 51 mc supplied) (coverage can be extended to 49.8 mc by changing second heterodyne crystal). **Emission:** SSB upper/lower, AM & CW. **DC power input:** 20 watts peak. **RF power output:** 10 watts P.E.P. SSB, 10 watts, CW, 2.5 watts AM. **Carrier suppression:** 50 db or better. **Sideband suppression (unwanted):** 40 db or more. **Circuitry:** Phasing method used to generate SSB signal, heterodyned to desired output frequency. **Output impedance:** 50 to 75 ohm, unbalanced. **Audio frequency response:** 300-3,000 cps. **Keying:** Grid block keying with key click filter. **Tuning knob ratio:** Approx. 45 kc per turn. **Power requirements:** 117 volts AC, 50/60 cps, 77 watts standby, 95 watts SSB & CW, 90 watts AM. **Dimensions:** 16⅝" W x 10⅜" H x 10" D.

Heathkit HA-20 6-Meter LINEAR AMPLIFIER

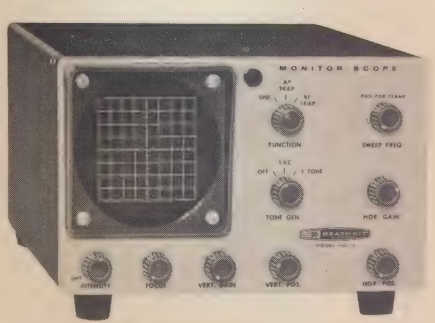
HA-20 $99.95

- **125 watts P.E.P. input SSB, 75 watts DC input AM**
- **Neutralized push-pull 6146 final amplifiers**
- **Forced-air cooling of final amplifiers**
- **Complete shielded RF circuitry**
- **Metered grid current, plate current, plate voltage, relative power**

For increased power on six meter, add this new Heathkit HA-20! Style and performance mate to the HX-30 at left, this efficient VHF linear requires just 2.5 to 10 watts P.E.P. driving power for a full 70 watts P.E.P. *output* to the antenna! Its tuned grid input permits a variety of driving power levels and the tuned, link-coupled output easily matches any 50 to 75 ohm coaxial transmission line. To put your TVI fears to rest and to provide improved amplifier stability, the RF amplifier compartment of the HA-20 is completely shielded with perforated metal. The push-pull 6146 final amplifier tubes are fan cooled for longer life, and conventionally neutralized by the stub method for added stability. The final amplifier screen voltage is regulated. The front panel meter can monitor grid current, plate current, plate voltage, and relative power output. The power supply uses solid-state rectifiers for cool, efficient operation.

Kit HA-20, 39 lbs., no money down, $10 mo.....**$99.95**

SPECIFICATIONS—Driving power required: 2.5 to 10 watts P.E.P. **Power input:** 125 watts P.E.P. SSB, 75 watts D.C. AM. **Power output:** 70 watts P.E.P. SSB. **Output impedance:** 50 to 75 ohm (unbalanced). **Output coupling:** Link. **Input impedance:** Approx. 50 ohm. **Input coupling:** Link (tuned grid). **Panel metering:** Grid current, plate current, plate voltage & relative power output. **Frequency coverage:** 49.8 to 54 mc. **Tube complement:** (2) 6146, (1) OA2. **Cooling:** Forced-air (self-contained fan). **Power requirements:** 90 watts standby, 200 watts max. @ 117 volts AC 50/60 cycles. **Dimensions:** 10⅜" H x 16⅝" W x 10" D.



HO-10 $59.95

Heathkit MONITOR SCOPE shows quality of your signal

- **Specially designed for Amateur Radio use**
- **Displays envelope, AF & RF trapezoid patterns on 3RP1 cathode ray tube**
- **6-tube, 4-diode circuit includes two-tone test oscillator**

Here's the perfect answer for modulation monitoring of transmitted and received signals. Standard coaxial connectors are provided for simple connection to antenna system feed line. Features automatic switching between received and transmitted envelope pattern. Handles power outputs from 5 watts to 1 KW. 11 lbs.

Kit HO-10 . . . no money down, $6 mo.....**Only $59.95**

SPECIFICATIONS—Vertical response: ±3 db from 10 cps to 500 kc. **Sensitivity:** 500 mv per inch deflection. **Input resistance:** 50 k ohm. **Horizontal response:** ±3 db from 3 cps to 30 kc. **Sensitivity:** 800 mv per inch deflection. **Input resistance:** 1 megohm. **Sweep generator: Recurrent type:** 15 to 200 cps (variable). **Tone oscillators:** Approximately 1000 cps and 1700 cps. **Output voltage:** 15 mv (nominal). **GENERAL: Frequency coverage:** 160 through 6 meters (50-75 ohm coaxial input). **Power limits:** 5 watts to 1 kilowatt output. **Front panel controls:** Function Selector, Sweep Frequency, Tone Generator, Horizontal Gain, Horizontal Position, Vertical Position, Vertical Gain, Focus, Intensity/Off. **Rear control:** Xmtr. Atten. Attenuates 0 to 24 db at approximately 6 db per step. **Power supply:** Transformer operated, fused ½ amp. **Power requirements:** 105-125 VAC, 50/60 cps, 35 watts. **Dimensions:** 5¼" H x 7⅜" W x 10½" D.

and Save up to 50%

HEATHKIT®

Heathkit HX-10 80-10 Meter SSB TRANSMITTER

HX-10 $334.95

- More than a thousand Hams can now attest to the "Marauder's" performance and value
- First complete filter-type SSB transmitter in kit form
- Operates SSB (upper or lower sideband), CW, AM & FSK
- 180 Watts P.E.P.—SSB & CW—on 80 through 10 meters
- Multi-section, hermetically sealed crystal band-pass filter
- Dual conversion, crystal controlled heterodyne oscillator
- Preheated, temperature compensated VFO

If you are thinking of switching to single sideband operation, check this Heathkit HX-10. Compare it with any! You'll find its outstanding array of features and lowest-of-all price make it the best buy in SSB! All modes of operation . . . high power output for use as a transmitter or as a driver for the Heathkit HA-10 KW Linear . . . 21 tubes, 8 diodes (2-6146's in the final) . . . complete with all power supplies built-in . . . all crystals furnished for 80 through 10 meters . . . all controls "out front" for easy operation . . . special 165-to-1 worm gear, anti-backlash tuning with approx. 10 kc per turn ratio . . . extra-margin, top quality parts . . . heavy duty, partitioned 16 gauge steel chassis and cabinet. For a lifetime of operation at lowest cost, order your HX-10 now.

Kit HX-10, 92 lbs., no money down, as low as $22 mo. **$334.95**

SPECIFICATIONS—Emission: SSB (upper or lower sideband), CW, AM and FSK. **Power input:** 180 watts PEP—SSB and CW, 75 watts AM. **Output impedance:** 50 to 75 ohms with not more than approximately 2:1 SWR. **Frequency range (MC):** 3.5 to 4.1; 6.9 to 7.5; 13.9 to 14.5; 20.9 to 21.5; 27.9 to 28.5; 28.5 to 29.1; 29.1 to 29.7. **Frequency stability:** Within 100 cps, after warm-up. **Carrier suppression:** 50 db below peak output. **Unwanted sideband suppression:** 55 db below peak output. **Keying characteristics:** Break-in CW provided by operating VOX from a keyed tone using grid-block keying. **Audio input:** High impedance microphone or phone patch. **Audio frequency response:** 400 to 3000 cps at ±3 db. **Power requirements:** OFF—4 watts; STANDBY—200 watts; KEY DOWN—400 watts at 117 volts, 50/60 cycles AC. **Cabinet size:** 19" W x 11⅝" H x 16" D.

For maximum SSB power at lowest cost . . . Heathkit HA-10 KILOWATT LINEAR

HA-10 $229.95

- Completely self-contained desk-top KW linear amplifier
- Operates SSB, AM and CW on 80 through 10 meters
- Exclusive internal RF shielding • 811A & 866A tubes

For big power, choose the big-value Heathkit HA-10. It's ready to deliver a solid kilowatt with all the features you want, yet it costs just half that of comparable units! The final amplifier has four paralleled 811A's . . . the power supply has two 866A's . . . all forced-air, fan cooled. Filament and bias supplies are built-in. Any transmitter of 50 to 75 watt output will drive it (no matching or swamping networks required) . . . the HX-10, left, is an ideal driver. Stable, grounded-grid circuitry gives up to 70% efficiency. Perforated steel RF compartment shielding decreases TVI radiation and improves stability. Monitor scope output provides constant RF sampling regardless of frequency. Interlocked HV switching protects rectifier tubes. When you make that big jump in power, make it with the HA-10.

Kit HA-10, 101 lbs., no money down, $22 mo. **$229.95**

SPECIFICATIONS—Maximum power input: SSB-1000 watts P.E.P., CW-1000 watts, AM-400 watts (500 watts using controlled carrier modulation), RTTY-650 watts. **Output circuit:** Variable pi-network (50 to 75 ohms). **Driving power required:** 50 to 75 watts—depending on frequency. **Input circuit:** Broad banded—requires no tuning. **Input impedance:** approximately 70 ohms; provides effective match for exciters having 50 ohm output Z. **Band coverage:** 80, 40, 20, 15, 10 meters. **Panel metering:** Switch-selected, grid current, plate current, high voltage and relative power output for ease of loading. **Tube complement:** 4-811A, 2-866A. **Dimensions:** 19⅛" W x 11⅝" H x 16" D.

Special SSB HAM MIKE

HDP-21 $29.40

An excellent value! Specially modified to our specifications for SSB communications. Response is limited from 300 to 3,000 cps voice frequencies, for extra "punch". Rugged die-cast zinc case and stand, chrome plated. Grip-to-talk sw. with lock position. Hi-Z dynamic. 3 lbs.

HDP-21 . . . no money down, $5 mo. . . . **$29.40**

Deluxe "Mohawk" RECEIVER

RX-1 $299.95

- Amateur band coverage only for max. stability & accuracy
- 1 uv input for 10 db signal to noise ratio
- Factory assembled and aligned coil/bandswitch assembly
- Built-in 100 kc crystal calibrator

Kit RX-1 . . . 69 lbs., no money down, $28 mo. **$299.95**

Matching "Apache" TRANSMITTER

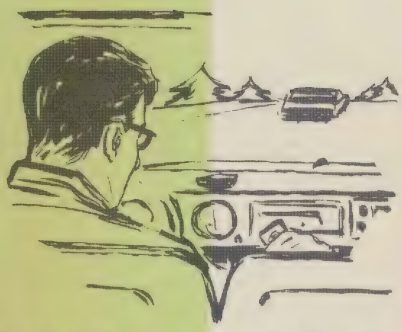
TX-1 $252.50

- 150 watts phone, 180 watts SSB & CW
- Covers 80 through 10 meters
- Provision for SSB adapter
- Adjustable low-level speech clipping
- Time sequence keying —"spotting" button

Kit TX-1 . . . 113 lbs., no money down, $24 mo. **$252.50**

Enjoy the Fun and Excitement of Mobile

Heathkit HR-20 SSB MOBILE RECEIVER . . . beautifully designed throughout!



HR-20 $134.50

- **Tunes SSB, AM & CW signals—80 through 10 meters**
- **Better than 1 uv sensitivity on all bands**
- **Crystal bandpass filter for sharp selectivity**
- **Crystal controlled BFO for selectable sideband reception**
- **Built-in calibrated "S" meter—30-1 gear drive tuning**

New features and advanced design are effectively combined in the Heathkit HR-20 "Mobile" receiver to bring you performance, versatility and operating convenience unequalled at this low Heathkit price anywhere! A tuned RF stage, crystal bandpass filter, extensive temperature compensation and voltage regulation of all oscillators assure excellent sensitivity, selectivity and stability so vital in obtaining "top" mobile communications. Amateur bands 80 through 10 meters are separately calibrated in five bands to assure proper tracking on the dial and to allow precise frequency settings. Other features include a product detector for SSB and CW reception, and a diode detector for AM. A series noise-limiter, controllable from the front panel, effectively reduces ignition, electrical and other forms of pulse-type noises in AM signals. Front panel selection of either fast or slow AVC action tailors receiver response time to suit varying band conditions. An 8-ohm speaker output and a separate 500 ohm output is provided for headset or anti-trip circuit in transmitter. Operates mobile or fixed with Heathkit HP-10 or HP-20 power supplies below. Recommended for more experienced kit builders. 19 lbs.

Kit HR-20 . . . no money dn., $13 mo. **$134.50**

SPECIFICATIONS—Frequency range: 80 thru 10 meters in 5 bands. 3.5 to 4.0; 7.0 to 7.3; 1.40 to 14.35; 21.0 to 21.5; 28.0 to 29.7 MC. **Intermediate frequency filter:** Center frequency, 3.0 MC; Bandwidth at —6 db, 3.0 KC; Bandwidth at —60 db, 10.0 KC Max.; Hermetically sealed. **Panel controls:** Sideband Select; R.F. gain; A.F. gain—Off-On; Noise Limiter; AVC select; main tuning; band switch; antenna trimmer; SSB, CW-AM switch. **Signal-to-noise ratio:** 10 db at 1 microvolt or less. **Tube complement:** 6BZ6—R.F. amp.; 6EA8—Mixer-Oscillator; 6BZ6—1st I.F. amp.; 6EA8—2nd I.F. amp. (½); 6EA8—S meter amp (½); 6BE6—Product detector—BFO; 6BJ7—AM detector-noise limiter—AVC; 6BE8—1st Audio-Audio output; OA2—Voltage Regulator. **Output impedance:** 500 ohms and 8 ohms. **Power requirements:** 6.3 or 12.6 volts 4 amps AC or DC, 300 volts DC at 120 MA. **Cabinet Size:** 6¼" H x 12¼" W x 9¾" D.

Heathkit HX-20 SSB MOBILE TRANSMITTER . . . 90-watts of power!

$199.95 HX-20

- **Complete bandswitching of 80 through 10 meter bands**
- **Hermetically sealed crystal bandpass filter**
- **Crystal controlled dual conversion heterodyne circuitry**
- **Automatic level control for greater talk power**

A matching counterpart to the superb HR-20 Receiver, the HX-20 is a complete, single-sideband suppressed-carrier transmitter featuring automatic voice-operated transmit/receive switching (VOX) for full mobile operating convenience! Attractive, functional styling . . . 90 watt input to final . . . and many more design features deliver effective SSB mobile communications with plenty of "punch!" Crystal filtering and balanced modulator circuitry provide long-term suppression stability that stays put! Other quality features in the HX-20 include a temperature stable VFO for rock-steady frequency settings, a multi-section hermetically sealed bandpass filter for excellent sideband suppression and to shape audio response, dual conversion heterodyne circuitry with high frequency oscillators crystal controlled for stability, and automatic level control for greater talk power without distortion. Operates mobile or fixed with Heathkit HP-10 or HP-20 power supplies below. Recommended for more experienced kit builders. 22 lbs.

Kit HX-20 . . . no money down, $19 mo. **$199.95**

GH-12 . . . Push-to-talk microphone. 1 lb. **$6.95**

Kit MT-1 AM mobile transmitter in above styling. 21 lbs. no money down, $11 mo. **$105.95**

SPECIFICATIONS—Types of emission: SSB (Upper or lower) and CW. **Power input:** 90 watts PEP, SSB and CW. **Output impedance:** 50 to 75 ohms with not more than approx. 2:1 SWR. **Frequency range:** (MC): 3.5 to 4; 7.0 to 7.5; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 29.5. **Frequency stability:** Overall frequency within 100 cps after warmup. **Carrier suppression:** 50 DB below peak output. **Unwanted sideband suppression:** 55 DB below peak output. **Keying characteristics:** Grid block keying throughout. **Audio input:** High impedance microphone. **Power requirements:** 6.3 or 12.6 volts 4 amps.;—125 volts 20 milliamps; 300 volts 100 milliamps; 600 volts 130 milliamps (uses Heath HP-20 or HP-10 power supplies). **Cabinet size:** 12¼" W x 6¼" H x 9¾" D.

Transistor MOBILE POWER SUPPLY

- **Furnishes all power required to operate both transmitter and receiver**
- **All semi-conductor circuit for long life, dependable performance**

Kit HP-10, 10 lbs. . . . no money dn., $5 mo. **$44.95**

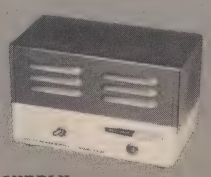
SPECIFICATIONS—Input voltage: 11 to 15 V DC (12.6 nominal). **Input current:** 2 to 13 amps (as a function of output load). **Total power output:** 120 watts continuous, 150 watts normal intermittent operation. **Power available:** 600 VDC @ 200 ma or 600 VDC @ 150 ma & 300 VDC @ 100 ma, and bias of —125 VDC @ 30 ma. **Efficiency:** Approximately 75%. **Maximum ambient operating temperature:** 120 degrees F. at 120 watts continuous, 150 degrees F. at 120 watt intermittent operation (50% duty cycle). **Dimensions:** 8" W x 7½" H x 6¾" D.

Heathkit Auto and Marine RF NOISE SUPPRESSION COMPONENT Set

Hams, fleet owners, CB operators and boat owners can easily install this kit to reduce low voltage electrical system noise (regulator hash, generator whine, and ignition coil interference). Will not suppress spark plug noise. 5 special thru-pass capacitors rated at 60 amps., 275° F. No special brackets required. Not required for alternator systems. 1 lb.

Model GDP-192 . . . . . **$16.95**

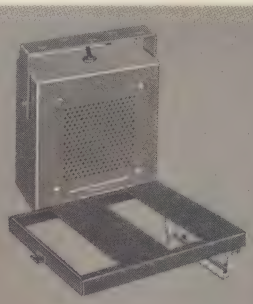
- **Furnishes filament, B+, and bias voltages**
- **Operates Heathkit and most other mobile gear on 117 VAC**
- **Octal socket, simple plug-in connection**



Utility AC POWER SUPPLY

Kit HP-20, 13 lbs., no money down, $5 mo. **$29.95**

SPECIFICATIONS—Power requirements: 117 volts AC, 50/60 cycles, 200 watts. **Total DC continuous power output:** 120 watts (600 volts @ 200 ma or 600 volts @ 150 ma & 300 volts @ 100 ma; bias of —130 volts @ 30 ma also provided). **Filament Power:** 6.3 volts @ 8 amperes or 12.6 volts @ 4 amperes. **Regulation:** Approximately 10% (50% load to 100% load, from high voltage tap). **Overall dimensions:** 9" L x 4¾" W x 6" H.



Mobile BASE & SPEAKER

Base holds Xmtr. & Receiver at drivers side. Adjustable.

Kit AK-6, 4 lbs. **$4.95**

5" PM speaker, 8 ohm imp.; in steel case with bracket.

Kit AK-7, 3 lbs. **$5.95**

Operations with Dependable Heathkits

Feature-packed TRANSCEIVERS for 6 & 2 meters!

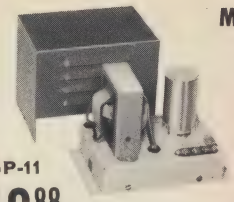
$199.95 HW-10

- Everything you need . . . transmitter, receiver and power supply . . . all in a single, compact unit
- Built-in 3-way power supply for 117 V AC, 6 or 12 V DC
- 10-watt RF output to antenna—6360 final amplifier
- Tracked VFO and exciter stages for single knob tuning
- Built-in low-pass filter—push-to-talk microphone

The Heathkit 6 meter "Shawnee" and 2 meter "Pawnee" are ideal for all-around communications on the VHF amateur bands. Their neat, compact design permits easy under-dash mounting in automobiles for a handsome "Mobile" installation or presents an equally attractive appearance on any desk top as a "Fixed Station" rig. The convenient built-in 3-way power supply and quick-disconnect cables furnished allow change to either mode of operation in just seconds! Beautifully designed throughout, the transmitters feature a built-in temperature stabilized VFO and switch-selection of four crystal positions for net, novice, CAP and MARS operation; tracked VFO and exciter stages for convenient single-knob tuning over any 500 kc band segment; a "spotting" switch to zero-in signals; efficient 6360 final RF amplifier for 10 watt output to antenna; built-in low pass filter to suppress harmonics; dual-purpose modulator that doubles as 15 watt PA amplifier; push-to-talk ceramic element microphone. Receivers feature double conversion with first oscillator crystal controlled; voltage regulation on all oscillators for high stability; large, illuminated slide-rule dial for both receiver and VFO; an automatically switched panel meter to read signal strength or relative power output; squelch and noise limiter controls; 3" x 5" PM speaker; RF gain, BFO, and AVC on/off controls. The built-in 3-way power supply features transformer operation on 117 VAC and heavy-duty vibrator for 6 or 12 V DC operation. AC and DC cables are furnished with kit. A primary fused relay controls all power to the transceiver in mobile installations. Sturdy construction features wrap-around steel case and extensive shielding of transmitter, receiver and power supply sections. Mounting bracket included. Recommended for the more experienced kit builder. Average construction time is 60 hours. 34 lbs.

Kit HW-10 (6 meter transceiver) . . . no money dn., $19 mo. **$199.95**
Kit HW-20 (2 meter transceiver) . . . no money dn., $19 mo. **$199.95**

SPECIFICATIONS—RECEIVER SECTION—Frequency coverage: HW-20; 143.8 to 148.2 mc. HW-10; 49.8 to 54.0 mc. **IF frequencies:** Double conversion—First IF, 22 to 26 mc (tunable); Second IF, 2 mc. **Noise figure:** HW-20; 8.5 db or less, HW-10; 6 db or less. **Sensitivity:** .5 microvolts of input signal will provide an output signal better than 10 db over the noise level. **Squelch sensitivity:** Less than 1 microvolt. **Selectivity:** 15 kc at 6 db down. **Image rejection:** Better than 70 db. **IF rejection:** 50 db. **Input impedance:** 50 to 72 ohm, unbalanced. **Audio power output:** 3 watts (receiver operation); 15 watts (public address operation). **Headphone jack:** Low impedance, accepts PL-55 type plug (standard 2-conductor ¼" sleeve). **External speaker socket:** 8 ohm impedance, accepts RCA type phono plug. **TRANSMITTER SECTION—Frequency coverage:** HW-20; 143.8 to 148.2 mc (crystal or VFO control). HW-10; 49.8 to 54.0 mc (crystal or VFO control). **Modulation:** .01 volts minimum at 1000 cps = 100%. **RF power output:** 8 watts nominal AM, 10 watts nominal CW, 50 ohm non-reactive load. **Distortion:** 10% or less, with 100% modulation at 1000 cps. **Output impedance:** 50 to 72 ohm, unbalanced. **Low pass filter:** HW-20; 152 mc cutoff frequency. HW-10; 54 mc cutoff frequency. **Key jack:** Accepts PL-55 type plug (standard 2-conductor ¼" sleeve). **Crystal sockets:** Accepts FT-243 type holders, pin diameter .093", pin spacing .466". **Microphone:** High impedance ceramic element push-to-talk type with coil cord. **Crystals:** (Not furnished) HW-20; 8 mc fundamental range (8.000 to 8.222 mc for 2 meter band). HW-10; 8 mc fundamental range (8.333 to 9.000 mc for 6 meter band). **GENERAL—Power requirements:** Input voltage; 6.3V DC, 12.6V DC, 117V AC. Transmit—14.5 amps, 7.5 amps, 120 watts. Receive—8.5 amps, 4.5 amps, 60 watts. **Cabinet dimensions:** 6" H x 10" D x 12" W.



GP-11 $16.88

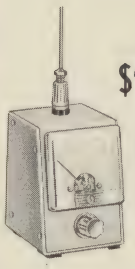
Mobile Vibrator POWER SUPPLY

- Converts AC equipment to DC operation
- Heavy-duty silicon diode rectifiers
- Use on either 6 or 12 volt systems

Kit GP-11, 5 lbs. **$16.88**

SPECIFICATIONS—Power requirements: 6 volt version, 6.3 VDC @ 6.5 amperes; 12 volt version, 12.6 VDC @ 3 amperes for rated output. **Power output:** 250 VDC @ 100 ma, ICAS. **Power rectifier:** Two silicon diodes in voltage doubler circuit. **Vibrator:** Mallory type 1610 or equivalent. **Vibrator frequency:** Approximately 115 cps. **Overall dimensions:** 4⅞" H x 6½" W x 4⅛" D.

RF POWER METER . . . monitors signal



PM-2 $12.95

- Operates with any transmitter
- Requires no external power
- Range: 100 kc to 250 mc

Shows relative power output of transmitter by sampling RF radiation near antenna. Small, compact size allows use anywhere. A strong magnet in the base of the PM-2 holds it fast to any steel surface, car dashboard, transmitter case, etc. 1 lb.

Kit PM-2 . . . . . **$12.95**

VARIABLE FREQUENCY OSCILLATOR

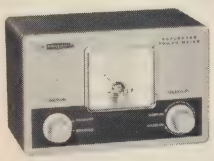
HG-10 $34.95

- Tunes 80 through 2 meters
- Plugs into DX-60 for general class operation
- Tremendous savings over cost of crystals

Rugged, reliable and loaded with features for top-notch performance! Rigid steel chassis for mechanical strength, cathode follower output for isolation, and regulated plate voltage for stability. Ideal for use with Heathkit DX-60 and most other transmitters requiring drive of 5 volts RMS or less. 11 lbs.

Kit HG-10 . . . no money dn., $5 mo. . . **$34.95**

REFLECTED POWER METER



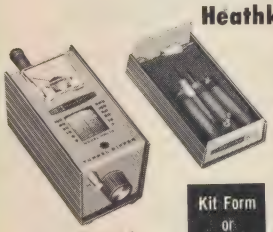
HM-11 $15.95

- Indicates forward or reflected power and SWR
- Covers amateur bands 160 through 6 meters
- Handles power of up to 1 kilowatt

An extremely useful amateur accessory! Shows matching of antenna's transmission system by measuring forward and reflected power. Panel meter shows SWR (standing wave ratio) from 1:1 to 3:1, and percentage readings. 2 lbs.

Kit HM-11 . . . . . **$15.95**

Heathkit "TUNNEL DIPPER"



HM-10A $34.95

Kit Form or Factory Assembled

- Tunnel diode oscillator—no tubes
- 6 color-matched coils & dial scales
- Many uses in amateur radio work

Functions as a signal generator or a very sensitive tuned RF detector. Ideal for checking resonant frequencies of tuned circuits, identifying parasitics, tuning traps or filters and many more! Self-contained and battery powered for portability. Less battery. 3 lbs.

Kit HM-10A . . . no money down, $5 mo. **$34.95**
Assembled HMW-10A . . . $5 mo. . . . **$49.95**

Low Cost 6 & 2 Meter TRANSCEIVERS

HW-29A $44.95

- Ideal for local net or emergency operations
- Built-in AC power supply—easy to build

Thousands sold and in use attest to their popularity and proven performance on the VHF amateur bands. Both models feature crystal-controlled transmitters and tunable superregenerative receivers with RF stage. Operate "fixed" with built-in AC power supply or "mobile" using Heathkit GP-11 vibrator power supply. AC & DC power cables, microphone, instructions included. Less crystal. 8 lbs.

Kit HW-29A (6 meter) . . . $5 mo. **$44.95**
Kit HW-30 (2 meter) . . . $5 mo. **$44.95**

For Convenient Operations at Lowest Cost, Equip

"Q" MULTIPLIER increases receiver selectivity

HD-11 $14.95

May be used with AC-DC or transformer operated receivers having an I.F. frequency between 450 and 460 kc. Provides an effective "Q" of 4,000 for peaking or rejecting a signal on AM, CW or SSB. Produces a sharply peaked I.F. curve for CW reception, broad peaked I.F. for phone operation or a deep rejection notch to eliminate a closely interferring heterodyne. Both peak or notch positions are tuneable to any point in the receiver's I.F. bandpass. 3 lbs.

Kit HD-11 ..... **$14.95**

Hybrid PHONE PATCH kit

- Convenient one-switch operation
- Allows VOX or manual operation

HD-19 $29.95

Transfer of audio signals between telephone lines and two-way radio communications equipment is easily and efficiently accomplished with this easy-to-install hybrid phone patch. Operates with nearly all transmitters and receivers, including transmitters employing automatic voice control (VOX). A standard VU meter accurately monitors output to any 600 ohm telephone line to prevent crosstalk. Controls include a single on/off function switch and separate transmit/receive gain controls. Special hybrid transformer provides a minimum of 30 db isolation. Use with 3-16 ohm speakers, Hi-Z mike. 3 lbs.

Kit HD-19 . . . no money down, $5 mo. **$29.95**

Know your frequency with this 100 kc CRYSTAL CALIBRATOR

- 100 kc to over 54 mc at 100 kc intervals
- Transistorized circuit
- Battery powered

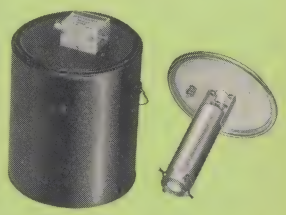
HD-20 $14.95

Ideal for checking dial calibration of communications receivers and transmitter VFO's! Produces highly accurate signals from 100 kc to at least 54 mc in 100 kc intervals. Operation requires only connection to the antenna terminals of the receiver and switching the unit "on." The circuit is transistorized for long life and dependable performance. A single 9-volt battery furnishes all power required. The 100 kc crystal included has 0.005% tolerance. 1 lb.

Kit HD-20 ..... **$14.95**

"Cantenna" TRANSMITTER DUMMY LOAD . . . ideal for servicing, testing!

With the Heathkit "Cantenna" you can forget about TVI, FCC violations, QRM, etc., while servicing or testing Amateur or Commercial transmitting equipment. Handles powers up to 1 kilowatt I.C.A.S. with less than 1.5 V.S.W.R. up to 300 megacycles. A coax input connector is provided for transmitter and phono jack for DC output to VOM or VTVM for relative power measurement. Features a special oil-cooled temperature-stable resistive element. Impedance is 50 ohms. Oil capacity is one gallon (not included). 3 lbs.



HN-31 $9.95

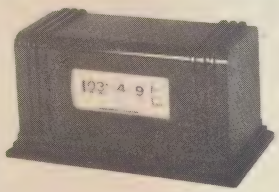
Kit HN-31 ..... **$9.95**

Amateur Log Books

Five special log pads and attractive vinyl cover. Measures just 8½" x 5½" closed. Space is provided for each station contacted and for info such as handle, QTH, reports, rig and comments, traffic and schedule summaries. A very popular item.

No. 597-110 . . . Five log books & cover . . . 2 lbs. **$2.95**

No. 597-111 . . . Five replacement log pads . . . 2 lbs. **$1.95**



Pennwood 100-24H-¼ Tymeter

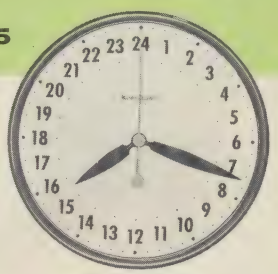
Numeral type 24 hour station clock. Self-starting, U.L. approved. Dome-shaped, full-vision window glows in the dark. Ideal for amateur and commercial stations or short wave listeners. Walnut plastic case. Measures 4" H x 7¾" W x 4" D. 3 lbs.

HDP-173 ..... **$14.85**

Hy-Gain "Hy-Lite" Station Sign

Every radio amateur needs this! "On-the-Air" sign lights up when your station is in operation to minimize annoying interruptions, etc. Oval shaped sign measures 4" x 8". Easily installed on wall or shelf. Operates from antenna or transmitter relay automatically. Includes cord, plug and light bulb. For 110 volts AC. 1 lb.

HDP-283 ..... **$8.95**



Mastercrafters 2324 International

A big, easy-to-read 24-hour wall clock. 12" white dial, black hands and numerals, red sweep second hand. 13½" case available in black or chrome. Dependable self-starting U.L. approved electric movement. 7 lbs.

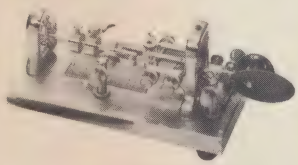
HDP-303C Chrome case **$11.75**

HDP-303B Black case **$9.75**

"Time Master" 10-Minute Timer

Automatically sounds bell every ten minutes to remind the amateur operator to give his station call. Adjustable reset at any time during any ten-minute period. Ideal for VOX operations. Operates on 110-120 volt 60 cycle AC. Measures just 4⅛" x 2⅜" x 2¾". 2 lbs.

HDP-183 ..... Only **$8.85**



Vibroplex "Original" Key

Praised by its thousands of satisfied users for ease of operation, sharp clear signals and all-around excellence. Precision machined and perfectly balanced. Super-speed control mainspring adjusts from slowest to highest speeds without changing weights. Chrome-plated mechanism, heavy cast-iron base with non-slip rubber feet. Grey finish. 4 lbs.

HDP-163 ..... **$22.45**

Radio Amateur's Handbook

Paperbound 1963 edition. Covers all phases of theory, construction and operating practices. Includes "plain-talk" info on basic electronics, HF, VHF and UHF equipment; AM, CW, and SSB gear; antennas, workshop practices, vacuum-tube data, etc. The Ham's bible. 1 lb.

HDP-293 ..... **$3.50**

Turner 254C Microphone

Ideal for Amateur, Citizen's band or commercial applications. High impedance ceramic desk mike with touch bar on-off switch and lever-lock on-off switch. Rugged die-cast construction. 7 ft. cable. Response is 80 to 7,000 cps. 3 lbs.

HDP-213 . . . $23.50 mftrs. list. **Net $13.95**

with these Selected Amateur Radio Accessories

New-tronics "Hustler" Mobile Antennas for 6-10-15-20-40-75 Amateur and 11-meter Citizen's Band

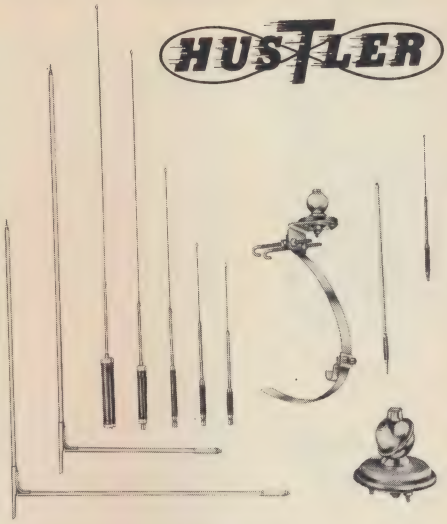
Select only one mast and the special resonator for the band you operate. Use any length of 52 ohm cable. Fold-over 54″ heat treated ½″ aluminum mast permits easy change of resonators. Mast has ⅜-24 base stud to fit standard mobile mounts. SWR less than 2:1. Power rating 75 watts AM, 250 watts PEP SSB.

HDP-33 54″ rear deck or fender mount mast (MO-1) 2 lbs.... **$7.95**
HDP-43 54″ bumper mount mast (MO-2) 2 lbs.... **$7.95**
HDP-53 10 meter resonator (RM-10) 1 lb.... **$5.95**
HDP-63 15 meter resonator (RM-15) 1 lb.... **$6.95**
HDP-73 20 meter resonator (RM-20) 1 lb.... **$7.95**
HDP-83 40 meter resonator (RM-40) 1 lb.... **$9.95**
HDP-93 75 meter resonator (RM-75) 1 lb.... **$11.95**
HDP-103 11 meter Citizen's Band resonator 1 lb.... **$5.95**

HDP-113, 6-Meter Antenna, 1 lb.... **$8.64**
Tuneable, low SWR, four-section telescoping, loading coil. Heavy-duty brass tubing, triple chrome plated. Opens to 60″, collapses to 27″. Has ⅜-24 male thread stud.

HDP-133, Ball Mount Model NTS-2, 2 lbs.... **$8.97**
Stainless steel ball for cowl or fender; adjustable 180°.

HDP-143, Bumper Mount Model BM-1, 2 lbs.... **$6.95**
Flat alloy steel strap, heavy cadmium plated. Chrome plated 1½″ die cast ZAMAK ball with ⅜-24 thread.

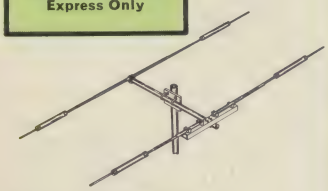


New-Tronics "Cliff-Dweller" Rotatable Dipole for 40 and 75 Meters

First and only remotely tuned rotatable dipole, designed especially for 40 and 75 meter use in limited space. The die cast aluminum mounting yoke contains motors and gear trains which drive the end sections of the dipole to adjust antenna resonance. Resonance and band switching controlled from transmitter location. VSWR: 1.1 to 1 or less across entire band. Feed-point variable to compensate for antenna environment. No traps, no baluns, no matching devices needed. Feed direct with any length of 52 ohm cable. Power handling capacity: max. legal limit. The Two-Bander, Model CD 40-75, length adjusts from 26′ to 31′-4″. Self-supporting, accepts 1¼″ threaded pipe for mounting in standard rotators. Max. turning radius approx. 15′-8″. 1¼″ heavy wall aluminum tubing. Waterproof.

HDP-393, 22 lbs., no money dn., $12 mo.... **Net $129.50**

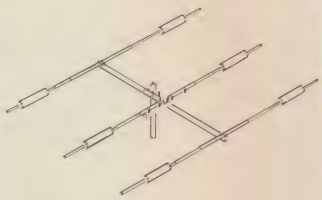
Antennas Shipped Express Only



MOSLEY TA-32 TRI-BAND BEAM ANTENNA

Ideal for limited space and light support installations. Broadband design provides peak efficiency on each band—10,15 or 20 meters. Forward gain, 5.5 db; front-to-back, 20 db; SWR, 1.1/1 or better. Maximum element length, 28 feet; Boom, 7 feet. Turning radius, 14.5 feet. 32 lbs.

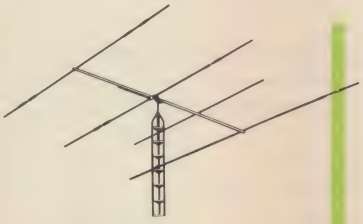
HDP-263, no money dn., $7 mo.... **$69.50**



MOSLEY TA-33 TRI-BAND ANTENNA

For 10, 15 and 20 meters. 8 db forward gain, 25 db or better front-to-back. SWR 1.1/1 or less. Trap gives all-weather resonance stability. Full KW rating on AM. 1½″ x 14′ boom needs no brace. Mounting plate fits masts to 1¼″ OD. Max. element length 28′. Turning radius 15½′. RG-8/U coax recommended. 54 lbs.

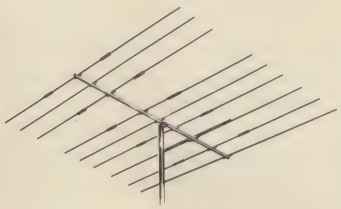
HDP-193, no money dn., $10 mo... **$97.75**



HY-GAIN TH-4 "THUNDERBIRD" TRI-BAND ANTENNA

For maximum performance on 10, 15 and 20 meters. 4-element, 2″ OD boom, 1¼″ telescoping to ¾″ elements, aluminum. Full size elements and full size boom spacing of 16 ft. Longest element is 32 ft. Interlaced 4th element allows high gain and F/B ratio. 42 lbs.

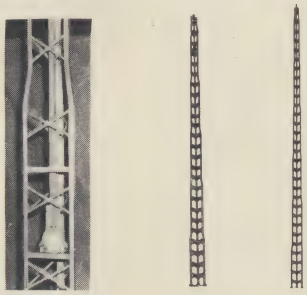
HDP-273, no money dn., $11 mo.... **$117.50**



HY-GAIN DB-62 6&2 DUOBANDER ANTENNA

Uni-directional gain antenna designed for optimum performance in the 50-54 mc and 144-148 mc ham bands. Extremely light weight, can be mounted on standard TV towers and rotors. Boom length 10½′, longest element 9′. 8 db gain on 6 meters, 15 db gain on 2 meters. SWR at resonance, below 1.5/1. 7 lbs.

HDP-313.... **$32.95**



HAX HAM SERIES TOWERS

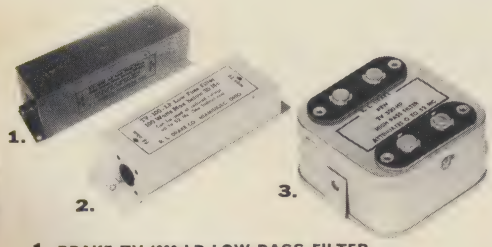
Heavy galvanized steel, all rivited construction. 48 ft. tower measures 10-3/16″ across one side of triangle at top, 25″ at the bottom. Sections are 8 ft. long. Available with choice of (HAX) base stubs for mounting in concrete or with screw anchor base (HAX-B) for free-standing towers. All towers include rotor mounting plate and top plate. Less antenna mast. Shipped F.O.B. Frankfort, Indiana by truck. No C.O.D.

HDX "HEAVY-DUTY" SERIES TOWERS

Same as above except of extra-heavy galvanized steel construction to support the largest and heaviest of beam antennas. 48′ tower measures 12¾″ across one side of triangle at top, 28″ at bottom. Order HDX series for mounting in concrete or HDX-B for screw anchor base.

Spaulding "Strato-Tower"

MODEL NO.	TYPE	HT.	SEC.	LBS.	NET
HDP-323	HAX-32	32′	4	115	$ 58.20
HDP-333	HAX-40	40′	5	160	$ 79.91
HDP-343	HAX-48	48′	6	220	$110.24
HDP-323-B	HAX-32B	32′	4	184	$ 76.70
HDP-333-B	HAX-40B	40′	5	229	$ 98.91
HDP-343-B	HAX-48B	48′	6	367	$135.61
HDP-353	HDX-32	32′	4	143	$ 76.75
HDP-363	HDX-40	40′	5	206	$107.10
HDP-373	HDX-48	48′	6	280	$142.21
HDP-353-B	HDX-32B	32′	4	212	$ 99.25
HDP-363-B	HDX-40B	40′	5	361	$137.80
HDP-373-B	HDX-48B	48′	6	430	$172.91



1. DRAKE TV-1000-LP LOW-PASS FILTER

Four pi-sections for sharp cutoff between 6 meters and channel 2. Will not detune antenna feed systems with low SWR. Matches 52 ohm line. Rates at 1000 watts input, 200 watts on 6 meters. 2 lbs.

HDP-13.... **$16.95**

2. DRAKE TV-100-LP LOW-PASS FILTER

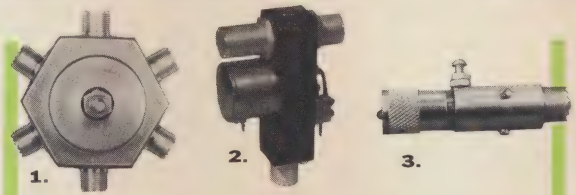
Same as above except lower power rating. Rated at 100 watts input, 20 watts on 6 meters. Less coax connector. 2 lbs.

HDP-233.... **$5.95**

3. DRAKE TV-300-HP HIGH-PASS FILTER

For all TV receivers. Protects against IF interference as well as interference from amateur transmitters operating on any frequency from 6 to 160 meters. High attenuation, low insertion loss. 1 lb.

HDP-243.... **$3.97**



COAXIAL ACCESSORIES

1. B & W 5-POSITION COAXIAL SWITCH 550-A—Permits instant selection of up to Five antennas, transmitters, receivers, etc., on 52 or 75 ohm lines. Handles up to 1 KW amplitude modulated power. —45 db crosstalk between outlets at 30 mc. UHF-type connectors. 2 lbs.

HDP-253.... **$8.25**

2. DOW-KEY DK60-G2C COAXIAL RELAY—DPDT auxiliary contacts. Unconditionally guaranteed. Less than 1.15:1 VSWR from 0 to 500 mc. Low loss pure silver contacts. Low crosstalk, patented "isolation" connector. Handles up to 1 KW of transmitted power, operates on 110 volt AC, 60 cps. 1 lb.

HDP-223.... **$15.65**

3. CUSH CRAFT "BLITZ BUG" COAXIAL LIGHTNING ARRESTER—Protects equipment against lightning damage and cable punctures due to high SWR. Spark gap principle provides constant drain off—eliminates heavy static charge build-up. No insertion loss to 500 mc. Standard PL-259 plug, DKCP connector. 2¼″ long. 1 lb.

HDP-383.... **$3.95**

CDR
ANTENNA ROTOR MODEL "HAM-M"

Supports 1000 lbs. of dead weight. Positive brake locks rotor in position against any wind. Withstands 3500 inch-pounds of torque. Double-stage switch permits instant direction reading without moving rotor. Meter is calibrated in degrees for high accuracy readings. Heavy-duty power transformer, separate transformer for direction indicator. Designed for 8-wire cable. 26 lbs.

HDP-23, no money dn., $11 mo.. **$117.11**

PORTABLE GENERATOR

1 KW continuous rating, 115V, 60 cycle output. Ideal for field day and emergency use. See description on page 45.

Heathkit® Brings You Highest

NEW! Heathkit "Service Bench" VTVM . . . Brand New Functional Styling Brings a New High in Operating Convenience!

THROUGH HEATH RESEARCH NEW

IM-13 $32.95

- NEW gimbal bracket permits bench, shelf, or wall mounting
- Meter tilts to any desired angle for best viewing
- NEW vernier action zero and ohms adjust controls
- Large easy-to-read 6" 200 ua meter
- 11 megohm DC input for low circuit loading
- NEW single AC/Ohms/DC test probe with switch

Never before has a meter of such outstanding quality been combined with such practical, functional styling to present a universal appeal to VTVM users the world over! The handsome horizontal design of the Heathkit IM-13, with gimbal mounting bracket, permits neat, permanent mounting under a shelf, on the wall, or bench top, wherever most convenient to the operator. The meter tilts to any desired angle to eliminate light reflections and provide for best reading position. Thumbwheel nuts on the side of the case hold the meter firmly in any position.

Retaining all the desirable features of the preceding model IM-32 "Deluxe" service bench VTVM, the new IM-13 features the same proven circuit design, oversize 6" 200 ua meter movement, multi-colored meter scales and high contrast panel screening, to show at a glance the correct scale and range in use for fast, easy reading of all measurements. New features include vernier driven Zero and Ohms adjust controls for smooth positive zero settings and a new single AC-Ohms-DC test probe for operating convenience, all for the same low price.

Broad frequency response, precision 1% voltage divider resistors and high 11 megohm input, DB calibrations in 10 db steps, separate 1.5 and 5 volt AC scales for accurate low voltage AC readings and many more high performance features offered in the IM-13 make it one of the finest investments possible in dependable test facilities.

Clean, open circuit layout assures fast, easy assembly. Test leads included. Less battery. 5 lbs.

Kit IM-13 . . . no money down, $5 mo. **$32.95**

SPECIFICATIONS—Meter Scales DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale (1.5 and 5 volt AC ranges read on separate scales). **Ohmmeter:** Scale with 10 ohm center x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures 1 ohm to 1000 megohms with internal battery. **Multipliers:** 1% precision type. **Meter:** 6" 200 ua movement. **DC input resistance:** 11 megohms (1 megohm in probe) on all ranges. **AC input impedance:** 1 megohm shunted by 40 uuf (measured at input terminals). **Circuit:** Balanced bridge (push-pull) using twin triode. **Accuracy:** DC ±3%, AC ±5% of full scale. **Frequency response:** ±1 db 25 cps to 1 mc (600 ohm source). **Tubes:** 12AU7, 6AL5. **Battery:** 1.5-volt size "C" flashlight cell. **Power requirements:** 105-125 volts 50/60 cycle AC, 10 watts. **Dimensions:** 5" H x 12¾" W x 4⅝" D.

SAVE $2.50 ON PROBES

Get 309-C & 336 probe kits for $5.50 when you order any Heathkit VTVM or VTVM/EF-1 combination. $8 value. Enter on blank when ordering. Offer good March 1—May 15, 1963

RF Probe Kit 309-C, 1 lb., regular price $3.50 Extends RF measurements to 250 mc.

30,000 V. Probe Kit 336, 1 lb., regular price $4.50 100 factor multiplier extends DC ranges.

A time-honored favorite . . . Heathkit IM-11 VTVM

Kit Form or Factory Assembled

- 7 AC, 7 DC, 7 Ohms ranges
- Single AC/Ohms/DC probe with switch
- 4½" 200 ua meter movement
- 1% precision resistors

$24.95 IM-11

The quality and performance of this superb instrument have made it the world's largest selling VTVM. And now, with big volume savings passed on to you, its new lower price makes it a value unmatched in the industry! The IM-11 measures AC volts (RMS), AC volts (peak-to-peak), DC volts, resistance and DB, filling hundreds of daily test requirements. A component circuit board assures stable, uniform circuitry and easy assembly. Test leads included. Less battery. 5 lbs.

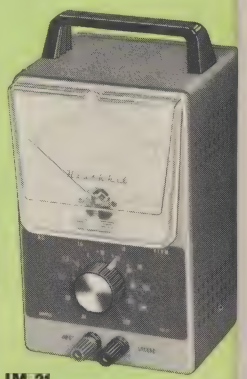
Kit IM-11 . . . no money down, $5 mo. . . . . **Only $24.95**

Assembled IMW-11 . . . no money down, $5 mo. **$46.75**

SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale. **AC peak-to-peak:** 0.4, 14, 40, 140, 400, 1400, 4000. **Resistance:** 10 ohm center scale x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. **Meter:** 4½" 200 ua movement. **Multipliers:** 1% precision type. **Input resistance DC:** 11 megohms (1 megohm in probe) on all ranges. **Circuit:** Balanced bridge (push-pull) using twin triode. **Accuracy:** DC ±3%, AC ±5% of full scale. **Frequency response:** ±1 db, 25 cps to 1 mc (600 ohm source). **Tubes:** 12AU7, 6AL5. **Battery requirement:** 1.5 volt, size "C" flashlight cell. **Power requirements:** 105-125 volt 50/60 cycle AC, 10 watts. **Dimensions:** 7⅜" H x 4-11/16" W x 4⅛" D.

Heathkit Laboratory AC VTVM

Kit Form or Factory Assembled



- 10 voltage ranges—0.01 to 300 volts rms full scale
- ±1 db 10 cps to 500 kc frequency response
- 10 megohm input impedance for minimum circuit loading
- Calibrated db scale

$33.95 IM-21

Specially designed for precision AC measurements! New features include extended frequency response, high 10-megohm input impedance and handsome modern styling plus all the fine features of the preceeding model, the famous Heathkit AV-3 . . . noted for its high sensitivity, excellent stability and ease of operation. VU-type ballistic damping of meter movement makes it ideal for audio design and development work, servicing, and countless laboratory applications. 4 lbs.

Kit IM-21 . . . no money down, $5 mo. **$33.95**

Assembled IMW-21 . . . no money down, $7 mo. **$60.25**

SPECIFICATIONS—Frequency response: ±1 db 10 cps to 500 kc. ±2 db 10 cps to 1 mc, all ranges. **Ranges:** VOLTS-Ten ranges from 0.01 to 300 volts RMS full scale. **Decibels:** Total-range −52 to +52 db, meter scale −12 to +2 db (0 db =1 mw in 600 ohms), ten switch selected ranges from −40 db to +50 db in 10 db steps. **Input impedance:** 10 megohms shunted by 12 uuf on ranges 10 to 300 volts, 10 megohms shunted by 22 uuf on ranges .01 to 3 volts. **Tube complement:** (1) 6AW8, (1) 6EJ7/EF-184. **Accuracy:** Within 5% of full scale. **Power requirements:** 105-125 volts AC, 50-60 cycles, 10 watts. **Dimensions:** 7⅜" H x 4-11/16" W x 4⅛" D.

Heathkit 20,000 Ohms/Volt VOM . . . New Special-Value Price!

- Sensitive 50 microampere meter
- 1% precision resistors
- Portable, use it anywhere!
- 35 meter ranges on 2-color scale

Kit Model MM-1, 5 lbs., $5 mo. . . . . **Only $29.95**

SPECIFICATIONS—Sensitivity: 20,000 ohms/volt DC, 5,000 ohms/volt AC. **Range AC & DC volts:** Full scale, 1.5, 5, 50, 150, 500, 1500, 5000. **Direct current:** 150 microamperes, 15, 150, 500 milliamperes, 15 amperes. **Ohmmeter:** 0.2 ohms to 20 megohms in three ranges. **Decibels:** −10 to +65 db. **Resistors:** 1% precision type. **Controls:** Range switch, Output—AC-DC Reverse DC switch, Ohms adjust control. **Batteries:** 1 type "C" cell, 4 penlight cells. **Dimensions:** 7½" x 5½" x 4".

SPECIAL VALUE $29.95

Quality at Lowest Cost

AUDIO GENERATOR Kit

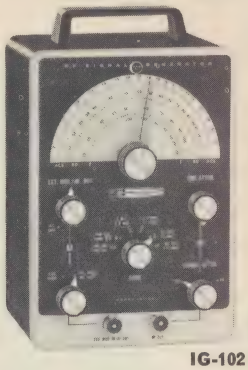
- **Switch selected output—10 cps to 100 kc**
- **Less than .1 of 1% distortion—20 to 20,000 cps**
- **Meter calibrated in volts and db**
- **Built-in 600 ohm load**

IG-72 **$41.95**

Near-perfect sine wave signals are produced by this beautifully designed instrument for a multitude of audio testing requirements. Frequencies are uniquely selected by three rotary switches. Signal frequency can be varied in steps of 1 cps from 10 cps to 100 cps and a four-position multiplier increases this range in multiples of 10 for an overall range of 10 cps to 100 kc. Accuracy is well within ±5% and distortion is less than .1 of 1% between 20 and 20,000 cps. A large 4½" 200 ua meter calibrated in volts and db shows output for carefully controlled tests. Output attenuator operates in 10 db steps and is calibrated in 8 full-scale meter ranges. An outstanding value! 8 lbs.

Kit IG-72 . . . no money down, $5 mo. **$41.95**

SPECIFICATIONS—Frequency: 10 cps to 100 kc, switch selected, 2 significant figures and multiplier. **Output:** 6 ranges 0 to .003, .01, .03, .1, .3, 1 volts RMS into external 600 ohm load or with internal load into Hi-Z, 2 ranges 0 to 3, 10 volts RMS into a minimum of 10,000 ohms, −60 db to +22 db in 8 steps −60 dbm to +2 dbm (0 dbm=1 mw into 600 ohms). **Distortion:** less than .1%, 20 to 20,000 cps. **Tubes:** (1) 6AU6, (1) 6CL6, (1) 6X4. **Power:** 105-125 volts AC, 50/60 cycles, 40 watts. **Dimensions:** 9½" W x 6½" H x 5" D.



RF SIGNAL GENERATOR Kit . . .
Covers 100 kc to 220 mc in six bands

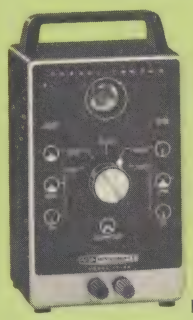
- **Large accurately calibrated dial scales**
- **Prewired/prealigned coil/bandswitch assembly**
- **Modulated or unmodulated RF output**
- **400 cps signal for audio tests**

IG-102 **$27.95**

The Heathkit IG-102 provides complete RF facilities with quality and performance unmatched at this low price! Carefully designed circuitry achieves near sine wave output with outstanding accuracy (2%) on all bands, and three large, easy to read dial scales permit precise frequency settings across the entire range. Extended frequency coverage in six bands provides 100 kc to 110 mc on fundamentals . . . 110 mc to 220 mc on calibrated harmonics. Modulated or unmodulated RF output is available at up to 100,000 microvolts, controlled by both fixed step and variable output attenuators. 6 lbs.

Kit IG-102 . . . no money down, $5 mo. **$27.95**

SPECIFICATIONS—Frequency range: Band A, 100 kc to 320 kc; Band B, 310 kc to 1.1 mc; Band C, 1 mc to 3.2 mc; Band D, 3.1 mc to 11 mc; Band E, 10 mc to 32 mc; Band F, 32 mc to 110 mc. **Calibrated harmonics:** 110 mc to 220 mc. **Accuracy:** 2%. **Output:** Impedance, 50 ohms; Voltage, 100 000 uv. **Modulation:** Internal, 400 cps, 30% depth; External, approx. 3 V across 50 k ohms for 30%. **Audio output:** Approx. 10 V open circuit. **Tube complement:** (1) 12AT7, (1) 6AN8. **Power requirements:** 105-125 V 50/60 cycles AC, 15 watts. **Dimensions:** 6½" W x 9½" H x 5" D.



"In-Circuit" CAPACITESTER Kit . . .
saves time in servicing

- **Detects open, shorted, and intermittent capacitors without removal from circuit**
- **Electron beam "eye" tube indicator**
- **Checks all paper, molded, mica and ceramic types**

IT-22 **$10.95**

With this handy kit you can test capacitors right in the circuit . . . without disconnecting leads . . . saving valuable time & labor in servicing. The IT-22 detects open capacitors from 50 mmf up, not shunted by an excessively low resistance, and shorted capacitors up to 20 mfd shunted by not less than 10 ohms. Intermittents are noted by a "flickering" of the "eye" tube indicator. A five-position switch controls power to the instrument and selects the test to be made. Two test positions are provided to check operation of the tester itself, assuring proper operation at all times. 4 lbs.

Kit IT-22 . . . . . **$10.95**

Deluxe CAPACITOR CHECKER . . .
Checks all condenser types!

- **Safely tests miniature electrolytics**
- **16 leakage testing voltages**
- **Direct reading scales**

IT-11 **$29.95**

This deluxe capacitor checker tests all types for value, leakage, shorts and power factor and also measures resistance from 5 ohms to 50 megohms. Capacitance measurements are made in four ranges from 10 mmf to 1000 mfd, all on direct reading scales . . . no involved calculations. The specially designed low voltage bridge circuit permits safe testing of miniature electrolytics used in transistorized equipment. 7 lbs.

Kit IT-11 . . . no money down, $5 mo. **$29.95**

SPECIFICATIONS—Capacitance, 4 ranges: 10 uuf to .005 ufd; .001 ufd to .5 ufd; .1 ufd to 50 ufd; 20 ufd to 1000 ufd. **Capacitor leakage:** DC test voltages from 3 to 600 volts in 16 steps. **Resistance, 3 ranges:** 5 ohms to 5000 ohms; 500 ohms to 500 K ohms; 50 K ohms to 50 megohms. **Comparator circuit:** External standard R, L or C; Max. Ratio 25-1. **Power supply:** Transformer-operated, half-wave rectifier. **Power requirements:** 105-125 volts AC, 50/60 cycles, 30 watts. **Dimensions:** 9½" H x 6½" W x 5" D.

3-DECADE CONDENSER KIT

IN-21 **$17.95**

Provides precision capacitor values in 100 mmf steps from 100 mmfd to 0.111 mfd. Ideal for substitution use in tuned circuits, bridge circuits and filter networks. Precision 1% silver mica capacitors are rated at 350 volts DC, continuous; 500 volts DC intermittent; and 1000 volts DC test. Low-loss ceramic wafer switches. 3 lbs.

Kit IN-21 . . . . . **$17.95**

6-DECADE RESISTANCE KIT

IN-11 **$24.95**

Ideal for lab use! Provides any resistance value from 1 ohm to 999,999 ohms in one ohm steps . . . all at ½ of 1% accuracy. Rated at 1 watt. Valuable for use as a multiplier, shunt, substitution resistor or as an arm for AC and DC bridges. Switches have make-before-break contacts for smooth control action without opening or shorting circuit. 3 lbs.

Kit IN-11 . . . $5 mo. . . . **$24.95**

CONDENSER SUBSTITUTION KIT

IN-22 **$5.50**

Contains 18 silver-mica and plastic-molded tubular capacitors in standard E.I.A. values from .0001 to .22 mfd. All are rated at 600 volts except the two largest which are rated at 400 volts. An 18 position switch allows individual selection of any value. Test leads included. 1 lb.

Kit IN-22 . . . . . **$5.50**

RESISTANCE SUBSTITUTION KIT

IN-12 **$5.95**

Provides convenient switch-selection of any one of 36 E.I.A. standard 10% 1-watt resistors, ranging in value from 15 ohms to 10 megohms. A slide switch selects high or low resistance ranges. Housed in an attractive black bakelite case. Many uses in servicing! 1 lb.

Kit IN-12 . . . . . **$5.95**

Equip Your Test Bench with Quality.

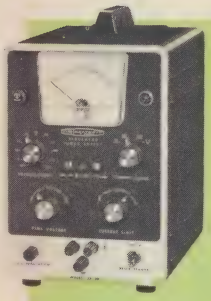
Transistorized Low Voltage DC
REGULATED POWER SUPPLY

- **For industrial, laboratory & service applications**
- **Delivers 0 to 50 V DC at up to 1.5 amperes**
- **Four current ranges 50MA, 150 MA, 500 MA & 1.5 A.**
- **Adjustable current limiter—30 to 110%**

Ultra-smooth DC output for precision work! Less than 150 microvolts AC ripple. Adjustable current limiter control automatically limits current on any range to protect both meter and circuit under test. Ideal for transistor circuit development work. Features series-type voltage regulator and Zener-diode for voltage reference. Finned "heat-sinks" protect the heavy-duty power transistors, assure long life. 14 lbs.

Kit IP-20 . . . no money down, $8 mo. **$72.95**

SPECIFICATIONS—Input: 105-125 volts 60 cps: 125 watts at full load (50V, 1.5A). **Output:** 0.5-50 volts DC: 1.5 amps max DC. **Load regulation:** ±15 millivolts, can be adjusted for no change. **Line regulation:** (105 to 125 VAC); Less than .005% change. **Ripple & noise:** Less than 150 microvolts. **Transient response:** Less than 25 microseconds. **Output impedance:** Less than .01 ohm DC to 10 kc: Less than .5 ohms 10 kc & up. **Overload protection:** current limiter & relay. **Meter:** 3½", 1 ma, 50 ohm. **Current ranges:** 50 ma, 150 ma, 500 ma, 1.5 amp. **Voltage ranges:** 5V, 15V, 50V. **Front panel controls:** On/Off, Coarse voltage switch, Fine voltage adjust. Current range switch. Current limit adjust, Meter slide switch, DC regulation, Reset Standby toggle switch. **Output terminals:** (3), plus (+), minus (—), chassis ground. **Dimensions:** 9½" H x 6½" W x 11" D.



IP-20
$72.95

Variable-Voltage Regulated
POWER SUPPLY

- **Furnishes B+, Bias, and Filament voltages**
- **DC output variable from 0 to 400 volts**
- **Panel meters monitor output voltage & current**
- **Ideal for experimenters, engineers**

An extremely valuable laboratory instrument! Output terminals are separate and insulated from chassis for safety in AC/DC work. Separate filament and high voltage transformers allow switching B+ "off" leaving only filament voltage "on" while making circuit changes. Rugged, well-rated components are used throughout for long reliable service and the power supply is fused for added protection. Professional styling with new three-color panel reflect its high quality. 16 lbs.

Kit IP-32 . . . no money down, $6 mo. **$56.95**

SPECIFICATIONS—Output: 0-400 volts regulated DC at 0-100 ma. cont., 125 ma intermittent, 0 to —100 volts DC at 1 ma variable bias voltage, 6.3 volts AC at 4 amps, filament voltage. **Regulation:** Output variation less than 1% from no load to full load: Output variation less than ±0.5 volt for a ±10 v. change at 117 v. AC input. **Ripple:** less than 10 millivolts RMS, ripple, jitter and noise. **Output impedance:** less than 10 ohms, DC to 1 mc. **Meters:** Voltmeter 0-400 V or 0-150 V.: Milliammeter 0-150 ma. **Dimensions:** 13" W x 8½" H x 7" D.

IP-32
$56.95

Heathkit Variable-Voltage
ISOLATION TRANSFORMER Kit

- **Controls AC line voltage to test requirements**
- **Power rated for color TV work**
- **Linear expanded-scale meter**
- **Variable 90 to 130 volts AC**

A handy instrument on any test bench! Helps solve those "tough" service problems. It controls AC line voltage to meet exact test requirements, isolates interference radiating devices from the power line, protects against AC/DC set shock hazard, induces breakdown of intermittent or weak components and much more! Two heavy-duty 8-position switches vary output in .75 volt steps from 90 to 130 volts AC and a spring-return slide switch permits fast check of line voltage on built-in meter. Two AC receptacles accept 3-prong or standard-type plugs. 21 lbs.

Kit IP-22 . . . no money down, $6 mo. **$54.95**

SPECIFICATIONS—Input: 105-125 volts 50/60 cycles. **Output:** Variable from 90-130 volts in steps of approximately .75 volt by means of transformer secondary tap switching. **Meter:** 90-140 volt scale, ±1 volt accuracy. Switch selection of input or output voltage indication. **Power rating:** 300 watts continuous, 500 watts intermittent. **Fuse:** 8 ampere. **Dimensions:** 6½" W x 9½" H x 5" D.

IP-22
$54.95

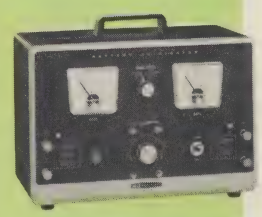
Heathkit Low-Ripple
BATTERY ELIMINATOR

- **Ideal for auto radio servicing**
- **Provides 6 or 12 volt DC power**
- **Less than .3% AC ripple**
- **Doubles as a battery charger**

An "instant" source of 6 or 12 volt DC power for servicing all types of automobile and transistor radios! Output voltage and current are continuously monitored on the two panel meters. Output voltage is variable on both ranges from 0-8 volts or 0-16 volts and a special highly-filtered output holds AC ripple to less than .3% for exceptionally smooth DC required in transistor work. 19 lbs.

Kit IP-12 . . . no money down, $5 mo. **$47.50**

SPECIFICATIONS—Continuously variable output: 6 volt range; unfiltered, 10 amp continuous, 15 amp maximum, filtered, 5 amp continuous, less than .3% ripple. 12 volt range; unfiltered, 5 amp continuous, 7.5 amp maximum; filtered, 5 amp continuous, less than .3% ripple. **Power requirements:** 105-125 volts 50/60 cycles AC at 200 watts. **Dimensions:** 13" W x 8½" H x 7" D.



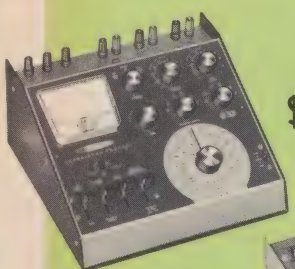
IP-12
$47.50

Heathkit Laboratory
TRANSISTOR TESTER

- **Provides complete DC analysis of PNP, NPN transistors**
- **DC gain (Beta, Alpha) read directly on calibrated scales**
- **15 ua basic range for leakage (Icbo, Iceo) tests**
- **Ideal for servicing, design work, incoming inspection, production testing, etc.**

Kit IM-30 . . . 7 lbs. . . . Less batteries., $6 mo. **$54.88**

SPECIFICATIONS—Checks: Transistors up to 15 amps and diodes up to 1.5 amps. **Tests:** Shorts, DC Gain (Beta 0-300) (Alpha 0-.9967), Leakage (Icbo, Iceo), Diode Forward and Reverse Current. **Meter:** Current ranges: 15 ua, 150 ua, 1.5 ma, 15 ma, 150 ma, 1.5 A, 15 A; Voltage Ranges: 1.5V, 5V, 15V, 50V, 150V (100K ohm/volt). **Power supply:** Internal, seven 1.5 volt size D batteries provide 1.5, 3, 4.5, 6, 7.5, 9 volts collector supply for gain or leakage and 1.5 volts for bias; External, 0-50 volts for gain, 0-150 volts for leakage and 5 volts max. for bias. **Bias control:** Permits any collector current from 0 to 15 amps for gain tests. **Gain control:** 3% wire-wound potentiometer has calibrated scales to give DC Beta and DC Alpha directly when meter is at null. **Lever switch:** Four spring return levers will individually select the following tests: Base Current, Gain, Collector Voltage, Collector Current, Leak Voltage, Short Test, Icbo and Iceo or diode currents. **Two voltage selector switches:** Gain and Leak Test Voltages can be individually preset at different voltage levels. **Two current range switches:** Collector and leak currents can be individually preset on different ranges. **Transistor and diode connections:** Universal transistor socket and binding posts. **External power supply connections:** Binding Posts for Gain, Leak and Bias supplies.

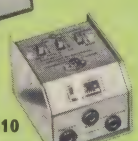


IM-30
$54.88

Heathkit TRANSISTOR/DIODE CHECKER

• **Tests regular & power transistors • Shows forward and reverse current of diodes • Battery powered for portability**
Kit IT-10 . . . 1 lb. . . . Less batteries **$6.95**

SPECIFICATIONS—Transistor test: leakage, short, open and current gain. **Diode test:** forward and reverse current. Also serves as a continuity checker. **Switches:** Forward-Reverse/PNP-NPN, Diode/HI-LO, Leakage-Gain. **Power supply:** self-contained, two 1.5 volt size "C" flashlight cells. **Dimensions:** 3¼" H x 3¼" W x 3¼" D.



IT-10
$6.95

Visual-Aural SIGNAL TRACER

• **Traces RF, IF and Audio signals**
• **Locates noisy & intermittent components**
• **Doubles as utility amplifier, test speaker**
Kit IT-12 . . . 5 lbs. **$19.95**

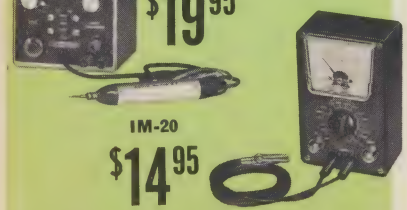
SPECIFICATIONS—Power supply: Transformer operated. **Power requirements:** 117 volts 50/60 cycles AC, 25 watts. **Tube complement:** 12AX7, 12CA5, 1629. **Speaker:** 3½" PM. **Probe and test leads:** 4' input lead for RF and audio with switch on probe body, 2-3' panel test leads with alligator clips. **Dimensions:** 4½" W x 7½" H x 4" D.

IT-12
$19.95

Heathkit HANDY LAB

• **Six functions in one instrument—RF & AF generator, DC voltmeter, continuity checker, substitution resistors & capacitors**
• **Simple one switch operation • Battery powered for portability**
• **Ideal for hobbyists**
Kit IM-20 . . . 2 lbs. . . . Less batteries **$14.95**

SPECIFICATIONS—DC voltmeter: Four ranges, 0-15, 50, 150, 500 volts full scale. **Resistance substitution:** 100, 1000, 10k, 100k, and 1 megohm, 1 watt 5% tolerance. **Condenser substitution:** .001, .005, .02, .1, and 8 ufd (electrolytic) at 400 volts. **AC indicator:** NE-51 neon lamp. **Continuity indicator:** #49 lamp. **Signal generator:** RF SECTION, preset adjustment from 450 kc to 700 kc, approximately 2 millivolts output. AUDIO SECTION, Approx. 1000 cps, 50 millivolts output. **Batteries:** Two 1.5 volt penlight cells. **Dimensions:** 6" H x 3½" W x 2½" D.



IM-20
$14.95

Your Test Equipment Dollar Goes

Test most all tube types with this Heathkit TUBE CHECKER—Latest design features

IT-21 $44.95

• Handsome styling • Multi-colored "Bad-?-Good" meter scale • Color-coded wiring harness for easy assembly • New compactron, nuvistor, novar & 10-pin miniature tube testing facilities

One of the most useful test instruments you can put on your service bench! Tests all tube types encountered in everyday radio & TV servicing! Tests include: quality on the basis of total emission, shorts, leakage, open element, and filament continuity. Tube quality is read direct on the multi-color meter scale and a neon bulb indicates leakage or shorts between elements and filament continuity. Flexible overall operation is made possible by the use of multiple filament voltages, adjustable cathode current, variable meter sensitivity and individual tube element switching. These features permit adding new tube types as they are developed to eliminate fear of obsolescence. The specially-designed roll chart mechanism features smooth free-rolling action and is spring loaded to keep chart taut at all times for easy reading. Chart and meter are illuminated. 11 lbs.

Kit IT-21 . . . no money down, $5 mo. **$44.95**

SPECIFICATIONS—Tests: Emission, short, leakage, open element, filament continuity. **Sockets:** 4-pin, 5-pin, 6-pin, 7-pin large and pilot light, 7-pin miniature, octal, loctal, 10-pin miniature, 9-pin novar, 12-pin compactron, 5-pin nuvistor, 7-pin nuvistor. **Meter:** 1 ma, BAD-?-GOOD scale, illuminated. **Line voltage adjustment:** Step type. **Roll chart mechanism:** Constant tension, free-rolling, thumbwheel operation, illuminated. **Filament voltage:** .63, 1.4, 2, 2.35, 2.5, 3.15, 4.2, 4.7, 5, 6.3, 7.5, 9.45, 12.6, 19.6, 25, 32, 50, 70, 110 V AC. **Element test voltages:** 30, 100, 250 V AC. **Power requirements:** 105-125 V AC, 50/60 cycles. **Dimensions:** 5½" x 8½" x 13".

Professional quality at low cost . . . Heathkit Mutual-Conductance TUBE TESTER

TT-1A $149.95

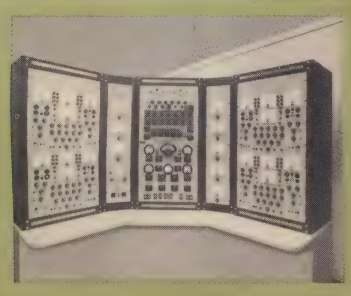
- Indicates Gm to 24,000 micromhos
- Ultra-sensitive grid current test
- Direct reading ohmmeter leakage test
- Built-in switch operated calibration circuit
- Built-in adapter for testing new compactron, nuvistor, novar and 10-pin miniature tube types
- Constant current heater supplies

No finer tube tester in kit form anywhere! The Heathkit model TT-1A provides professional quality, performance and features at an unbelievably low price! Handsomely styled in its rich, black leatherette portable case the TT-1A will provide complete and thorough tests of practically all tube types "on" or "away" from the test bench. Mutual conductance values (Gm) are read on an illuminated meter scale from 0 to 3,000 micromhos and multipliers permit reading values to 24,000 micromhos. Individual tube element switches allow checking any tube type regardless of base-pin connections . . . protect against obsolescence! Check the impressive specifications below and see what a tremendous dollar value the TT-1A represents! 33 lbs.

Kit TT-1A . . . no money down, $14 mo. **$149.95**

Adapter Kit TTA-1-1: Converts earlier model TT-1 to TT-1A. Includes new cabinet & adapter for testing compactron, nuvistor, novar & 10-pin miniatures. 13 lbs. **$19.95**

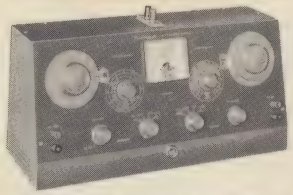
SPECIFICATIONS—Power Requirements—Voltage: 105-125, 60 cycle AC. **Watts:** 10-60 (dependent upon tube under test). **Plate supply:** (SILICON RECTIFIERS). **DC volts:** 26, 90, 135, 225 + variable 80 to 200 (Separate DC supply for space charge grids). **AC volts:** 20, 45, 177. **Bias supply:** (SILICON RECTIFIER). **Low range:** 0 to negative 5 volts DC. **High range:** 0 to negative 20 volts DC. **Signal voltages:** 2, 1, .5, .25 volts AC 5000 cycles. **Filament supply voltage:** .65, 1.1, 1.5, 2, 2.5, 3.3, 5, 6.3 7.5, 10, 13, 20, 27.5, 35, 47, 70 and 115. **Currents:** 300, 450, 600 ma. (Note: Filament voltage is reduced 10% during life test). **Testing circuits Gm:** (Mutual conductance-amplifiers) 0-24,000 micromhos. **Emission:** Rectifiers and diodes. **Leakage:** Direct reading ohmmeter. **Grid current:** ¼ microampere sensitivity. **Voltage regulators:** Firing voltage and regulation tolerance. **Low power thyratrons:** Grid characteristics, conduction capabilities. **Eye tubes:** Control grid characteristics. **Meter AC:** 1000 ohms/volt (1 volt full scale). DC: 89 ma full scale. **Scales Gm:** 0-3000 micromhos. VR test volts: 0-200 volts. Leakage: 0-10 megohms. Diodes O.K. Rectifiers O.K. Line check arrow at midscale. **Tube complement:** (1) 3A4 oscillator, (1) 12AV6 meter control. **Calibration circuit:** Built-in switch operated. **Socket accommodations:** 4-pin, 5-pin, 6-pin, 7-pin combination and pilot light, 5 & 7-pin nuvistor, 7-pin miniature, 7-pin sub-miniature, 8-pin sub-miniature, octal, loctal, 9-pin miniature, 9-pin, Novar, 10-pin miniature, 12-pin Compactron. **Line voltage adjustment:** Continuously variable. **Roll chart mechanism:** Constant tension, free rolling, thumbwheel operated, illuminated. **Dimensions:** Cabinet (outside): 17¾" W x 13½" H x 8½" D. **Panel and chassis:** 17" W x 12¾" H x 5½" D.



Tube Data Subscription Service

A valuable service for all Heathkit tube checker owners! Provides test data on new tube types as they become available to provide complete, up-to-date testing facilities at all times. Subscription includes supplements every three months and a new roll chart incorporating all previous supplement information at the end of the year. Free subscriptions, which expire at the end of the current year, are entered for new tube checker purchasers. Subscription rates are $2.50 per year for TT-1A tester and $1.50 per year on IT-21 and TC series type testers. Owners of the TT-1 and TT-1 plus TTA-1-1 adapters should request TT-1A subscriptions. Order this valuable service today!

Heathkit IMPEDANCE BRIDGE Kit . . . Precision Measurements at low cost!



IB-2A $69.95

• Four popular bridges in one handy instrument • ½ % Precision resistors, silver mica capacitors • Slanted control panel for easy reading

Employs Wheatstone, Capacitance Comparison, Maxwell and Hay bridge circuits for rapid and accurate measurement of resistance, capacitance, inductance, dissipation factors of capacitors and storage factors of inductors. Ideal for service technicians, radio amateurs, home experimenters. 11 lbs.

Kit IB-2A . . . no money down, $7 mo. **$69.95**

SPECIFICATIONS—Circuit: 4-arm impedance bridge. **DC Measurements:** Built-in power supply. Binding posts provided for external supply. **Meter:** 100-0-100 microampere meter. **AC measurements:** Built-in 1000 cycle generator. Terminals on panel for external generator at other frequencies. **Detector:** Vacuum tube detector and amplifier, using built-in meter. Terminals provided for external detector. **Resistance:** 0.1 ohm to 10 megohm. **Capacitance:** 100 mmf to 100 mfd. **Inductance:** 0.1 mh to 100 h. **Dissipation factor:** (D): 0.002 to 1. **Storage factor:** (Q) 0.1 to 1000. **Accuracy:** ½% decade resistors used. **Tube complement:** (2) 1U4, (2) 1L4. **Power supply:** Transformer and selenium rectifier. **Power requirements:** 105-125 V. 50/60 cycles AC, 10 watts. **Dimensions:** 8" H x 17" W x 6" D.

Heathkit "Q" METER . . . Lab facilities for precision tests

QM-1 $54.95

- Tests components at operating frequencies—150 KC to 18 mc
- Measures "Q", "L", and distributed capacitance of coils
- Large 4½" 50 ua meter—easy to read dial scales

Accommodates a wide range of inductance, capacitance and "Q" to cover practically all values encountered in RF circuits. A tremendous aid to service technicians, experimenters, lab technicians! Large 4½" 50 ua meter reads "Q" values direct. Easy to use and operate. 12 lbs.

Kit QM-1 . . . no money down, $6 mo. **$54.95**

SPECIFICATIONS—Frequency: 150 kc to 18 mc in four bands. **Inductance:** 1 microhenry to 10 millihenrys. "Q"; 250 full scale x1 or x2. **Capacitance:** Actual, 40 mmf to 450 mmf; Effective, 40 mmf to 400 mmf; Vernier ± 3 mmf. **Power requirements:** 105-125 volts, 50/60 cycles AC, 30 watts. **Dimensions:** 8" H x 17" W x 6" D.

Heathkit FM ALIGNMENT GENERATOR . . . simplifies servicing of FM Tuners & Receivers!

FMO-1 $34.95

- Switch selection of 90, 100 & 107 mc signals
- Variable 10.7 mc sweep, 200 kc to over 1 mc
- 100 kc bandwidth markers to check bandpass

Unique circuitry in this compact, easy to use instrument provides all the essential generator facilities for fast, easy alignment of FM tuners and receivers. A built-in 10 mc crystal-controlled oscillator assures accurate initial calibration of the instrument. Test leads included. 4 lbs.

Kit FMO-1 . . . no money down, $5 mo. **$34.95**

SPECIFICATIONS—Output frequencies for RF alignment: 90, 100 and 107 mc, switch-selected. **Modulation:** 400 cycle incidental FM. **For IF and detector alignment:** 10.7 mc sweep. **Sweep width:** 200 kc to over 1 mc. **Markers:** 10.7 mc (crystal); 100 kc sub-markers. **Modulation:** 400 cycle AM. **For other applications:** 10.0 mc (crystal) and harmonics; 100 kc and 400 cycle audio. **Tube complement:** (2) 6U8. **Power supply:** Transformer, selenium rectifier. **Power requirements:** 105-125 V. 50/60 cycle, 12 watts. **Cabinet size:** 7⅜" H x 4¾" W x 4⅜" D.

Twice As Far With Heathkits!

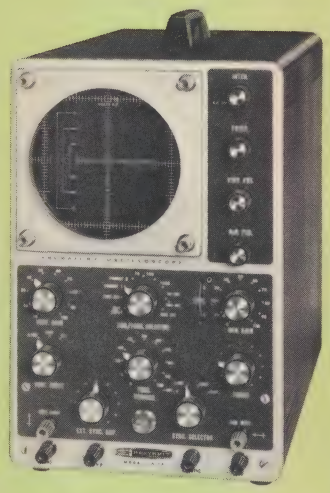
Heathkit "Extra-Duty" Wide Band 5" OSCILLOSCOPE

- **New professional styling • Full 5 MC bandwidth**
- **Heath patented sweep circuit—10 cps to 500 kc**
- **Push-pull vertical & horizontal amplifiers**

You'll find many "service-designed" features in the popular IO-12. Critical waveforms are handled easily, with clear, sharp pattern displays in every application. Excellent linearity and lock-in characteristics allow viewing stable waveform presentations even at upper frequency limits. The unique Heath patented sweep circuit functions reliably from 10 cps to over 500 kc. This feature, coupled with wide band amplifiers essential for color TV work, makes the IO-12 ideal for all types of general as well as specialized applications. Two extra "preset" sweep frequency positions allow fast-selection of any two frequencies used repeatedly in servicing. Other features include push-pull output amplifiers, positive trace position controls, peak-to-peak calibration reference, 3-step frequency compensated vertical input, automatic sync circuit, Z-axis input, 5UP1 CR tube, and cool running power supply. 2 circuit boards and wiring harness for easy assembly. 24 lbs.

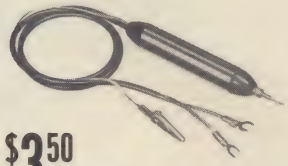
Kit IO-12 . . . no money down, $8 mo. **$76.95**

SPECIFICATIONS—(Vertical) Sensitivity: 0.025 volts RMS per inch at 1 kc. **Frequency response (referred to 1 kc level):** ±1 db 8 cps to 2.5 mc: +1.5 to −5 db, 3 cps to 5 mc: response at 3.58 mc. −2.2 db. **Rise time:** 0.08 microseconds or less. **Input impedance:** (AT 1 KC) 2.7 megohms at X1;3.3 megohms at X10 and X100. **(Horizontal Channel) Sensitivity:** 0.3 volts RMS per inch at 1 kc. **Frequency response:** ±1 db 1 cps to 200 kc; ±3 db 1 cps to 400 kc. **Input impedance:** 4.9 megohms at 1 kc. **Sweep generator:** Range—10 cps to 500 kc in five steps, variable, plus any 2 switch-selected preset sweep frequencies in this range. **Synchronizing:** automatic lock-in circuit using self-limiting synchronizing cathode follower. **Power requirements:** 105-125 volts 50/60 cycles AC at 80 watts; fused. **Dimensions:** 14⅛" H x 8⅜" W x 16" D.



IO-12 $76.95

Oscilloscope Test Probe Accessories . . . Extend Scopes Uses



$3.50 337-C

Scope Demodulator PROBE Kit

This easy to assemble demodulator probe kit gives added versatility to oscilloscope applications by permitting visual observation of the modulation envelope waveform of RF and IF signals. Useful in both radio and TV servicing in checking for distortion and presence or absence of modulation. Functions as AM detector to pass only modulation of signal and not signal itself. Voltage limits are 30 volts RMS and 500 volts DC. 1 lb.

Kit 337-C **$3.50**

IO-21 $49.95

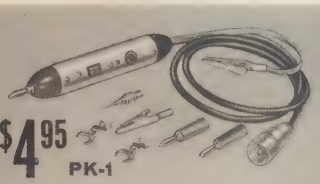
Heathkit General Purpose 3" OSCILLOSCOPE

• Push-pull vertical & horizontal amplifiers • Wide range sweep—20 to 100,000 cps • Automatic sync—retrace blanking • Easy to assemble

The IO-21 is compact, lightweight, and surprisingly versatile in performance . . . fills hundreds of daily requirements. The exceptionally clean, open circuit layout makes assembly easy, trouble-free. Circuit design features identical vertical and horizontal amplifiers with a frequency response of ±2 db from 2 cps to 200 kc. Sensitivity is .25 volts RMS/inch peak-to-peak deflection at 1 kc. Provision is made for direct connection to the vertical deflection plates of the cathode ray tube . . . ideal for high level R.F. monitoring. The Heath twin-triode sweep generator employed functions reliably from 20 to 100,000 cps in four switch-selected ranges. Automatic sync and retrace blanking. Provision for line sweep and internal or external sweep. Other features include a 3RP1 CR tube with special alloy neck shield to minimize trace distortion; focus and astigmatism controls and a husky power transformer. Power supply is fused for protection. An unbeatable scope value! 11 lbs.

Kit IO-21 . . . no money down, $5 mo. **$49.95**

SPECIFICATIONS—(Vertical and Horizontal Amplifiers Identical): Frequency response: ±2 db, 2 cps to 200 kc. **Sensitivity:** .25 volts RMS/inch P-P deflection at 1 kc. **Input impedance:** 10 megohms shunted by 20 uuf. **Sweep generator:** Range; 200-100,000 cps. Automatic sync, retrace blanking. **Power requirements:** 105-125 volts AC, 50-60 cycle, 40 watts. **Dimensions:** 9½" H x 6½" W x 10" D.



$4.95 PK-1

Low-Capacitance Oscilloscope PROBE Kit

An essential aid for high frequency work, the PK-1 minimizes loss of gain, circuit loading or distortion due to over-loading of scope input. A switch is provided on the probe to allow direct or x10 attenuated operation. An adjustable trimmer capacitor permits adjustment to match scope input requirements. Kit includes an assortment of connectors to allow use with most oscilloscope terminals. 1 lb.

Kit PK-1 . . . . . **$4.95**

IO-10 $79.95

Heathkit "Space-Saver" 3" DC OSCILLOSCOPE

• Identical DC or AC coupled vertical & horizontal amplifiers • DC to 200 kc bandwidth • External capacity binding posts for lower sweep rates

An ideal scope for use where extremely low sweep rates are desired! Small, compact and easy to carry, the IO-10 features identical vertical and horizontal amplifiers that may be either AC or DC coupled. The recurrent sweep generator covers 5 cps to 50 kc in four overlapping ranges and lower sweep rates may be obtained by connecting additional capacity across the external binding posts provided. Other features include: switch-selection of internal or external sync; 3RP1 CR tube; special alloy CR tube shield to minimize trace distortion; astigmatism control for sharp trace and regulated power supply. 16 lbs.

Kit IO-10 . . . no money down, $8 mo. **$79.95**

SPECIFICATIONS—(Vertical and Horizontal Channels Identical): Bandwidth: DC to 200 kc (2 db point). **Sensitivity:** 0.1 V (peak-to-peak) per ¼" (uncalibrated). **Attenuator:** 3-position, compensated type. **Gain control:** Continuously variable. **Input impedance:** 3.6 megohms shunted by 35 mmf. **Coupling:** Either AC or DC, switch-selected. **Relative phase shift between channels:** Less than 5°. **Sweep generator (Recurrent Type):** Linear saw-tooth produced by multivibrator type generator covering 5 cps to 50 kc in four overlapping ranges. "External capacity" binding post for lower sweep rates. **Sync provision:** Either internal or external, switch-selected. **Power requirements:** 105-125 V 50-60 cycle AC at 100 watts max. **Dimensions:** 7⅝" H x 4⅝" W x 11" D.

ID-22 $23.95

ELECTRONIC SWITCH Kit

Allows simultaneous observation of two separate signals on a scope, such as input and output of amplifiers for comparison or stage gain measurements, etc. Separate gain controls are provided for each channel and a position control lets you separate or superimpose signals as desired. Frequency response is ±1 db, from 0 to 100 kc. Operates with signal levels as low as 0.1 volt. Measures 9½" W x 6½" H x 5" D. Many uses in service and design work! 6 lbs.

Kit ID-22 . . . . . **$23.95**

Equip Your Workshop With

Choose the Hobby Items You've Been Wanting and Save

Heathkit is proud to offer this "big-value" selection of hobbyist accessories. Chosen from hundreds of items, all are guaranteed and may be purchased on Heath's liberal no-money-down time payment plan.

INDUSTRIALLY RATED POWER DRILLS

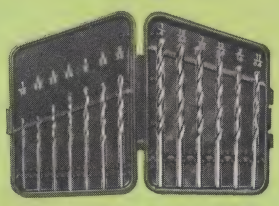
1 ONLY $20.95

2 ONLY $12.28

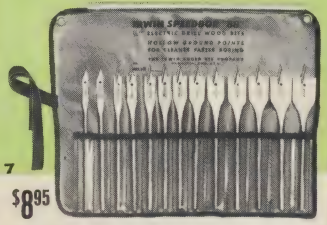
4 ONLY $19.95

6 ONLY $3.29

3 ONLY $15.88



5 ONLY $4.33



7 ONLY $8.95

1 NEW SHOPMATE "SUPER" DRILL KIT, $27.95 list ONLY $20.95
Here's real value! A super 29 piece drill kit, not to be compared with ordinary sets. Includes the new ShopMate ¾" drill (model 1838 described opposite) plus all these handy accessories: 7-in-1 Hole Saw Set (sizes: 1", 1¼", 1⅝", 1¾", 2", 2¼", 2½") cuts wood, wall board and plastic; Power Screwdriver Attachment with Phillips-Head detachable bit; 13-piece Alloy Tool Steel Twist Drill Set (sizes: 1/16" to ¼" graduated by 64ths), precision ground, hardened and tempered; 4-Piece Power Bit Set (sizes: ⅜", ½", ¾", 1"). All in a gray hammerloid finish box with clasp and handle . . . all for just $5.07 more than cost of drill alone! 10 lbs.
GDP-283, Mftrs. list $27.95 ..... **NET $20.95**

2 NEW SHOPMATE 1825 ¼" DRILL, ONLY $12.28
Almost ¼ horsepower of turning force; powerful 3.2 amp. motor has balanced armature; no-load speed of 2300 rpm, full-load 1400 rpm; multi-ball thrust and self-lubricating bronze bearings; drills to ¼" in steel, ½" in wood. 3-jaw geared chuck with key; lock-type trigger switch; 6', 3-wire cord & plug. U.L. listed as industrial tool. 9½" long, 5 lbs.
GDP-251, Mftrs. list $16.95 ..... **NET $12.28**

3 NEW SHOPMATE MODEL 1838 ¾" DRILL, ONLY $15.88
Nearly ¼ horsepower of turning force; powerful 3.4 amp. motor has balanced armature; no-load speed 1000 rpm, full-load 600 rpm; multi-ball thrust and self-lubricating bronze bearings; drills up to ⅜" steel, ¾" wood. 3-jaw geared chuck with key; lock-type trigger; auxiliary handle; 6', 3-wire cord & plug. U.L. listed as industrial tool. 10" long. 6 lbs.
GDP-261, Mftrs. list $21.95 ..... **NET $15.88**

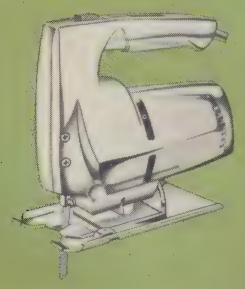
4 NEW SHOPMATE 1850 ½" DRILL, ONLY $19.95—One-third horsepower! U.L. listed as industrial tool. This compact, heavy-duty drill has a 3.6 amp. motor; balanced armature; multi-ball thrust and self-lubricating bronze bearings; no-load 500 rpm, full-load 370 rpm; drills ½" hole in steel 1" in hardwood. 3-jaw geared chuck with key, lock-type trigger: aux. handle; 6', 3-wire cord & plug. 7 lbs.
GDP-293, Mftrs. list $26.95 ..... **NET $19.95**

5 HANSON HIGH SPEED DRILL SET, ONLY $4.33—Contains 13 high speed drills from 1/16" through ¼" by 64ths. Packed in attractive, light-weight, unbreakable polyethylene case. Every drill instantly accessible and held firmly in place. Smooth, rounded edges with hinge and clasp. Serves as drill stand or wall rack.
GDP-693, 1 lb., Mftrs. list $6.75 ..... **NET $4.33**

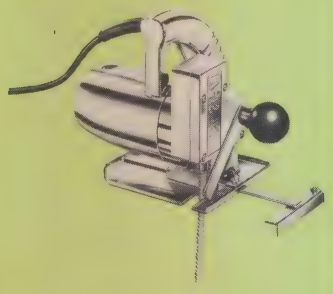
6 IRWIN SPEEDBOR 88 WOOD BITS SET #886, ONLY $3.29
Spade-type, one-piece forged of high analysis tool steel, heat treated. Hollow-ground points, precision ground ¼" shanks fit electric drills with conventional chucks. Size marked on heads; tip hole for hanging; ⅜", ½", ⅝", ¾", ⅞", and 1".
GDP-873, 1 lb., in plastic roll, Mftrs. list $4.50 .... **NET $3.29**
GDP-883, 1 lb., in metal wall rack, list $4.50 ..... **NET $3.29**

7 IRWIN SPEEDBOR 88 WOOD BITS SET #8813-R, ONLY $8.95
Same high quality bits, but larger set. Includes 13 bits, one each in sizes ¼", 5/16", ⅜", 7/16", ½", 9/16", ⅝", 11/16", ¾", 13/16", ⅞", 15/16", and 1" in red plastic roll.
GDP-863, 2 lbs., Mftrs. list $9.75 ..... **NET $8.95**

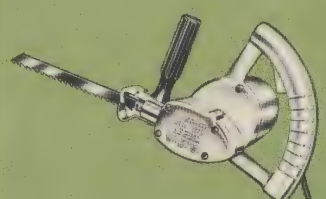
INDUSTRIALLY RATED POWER SAWS FOR EVERY PURPOSE



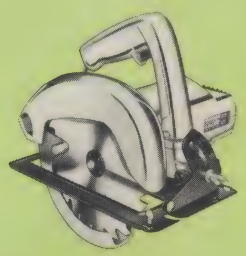
NEW SHOPMATE 1810 SABRE SAW—ONLY $17.95
New Quick-Stroke Sabre Saw cuts ⅛" mild steel, 1" non-ferrous metals, up to 4 x 4 hard-wood, or intricate scroll work. Quick-Return Cycle Reciprocator with 1" stroke for 30% faster action . . . 2300 strokes per min. Makes its own starting hole, cuts to 45° bevel on either side. Rugged 1/3 hp., 3 amp. fan cooled motor with built-in blower to keep saw line free of dust. Balanced armature with Life-Weld wiring. Roller bearing and oil-retaining bronze spherical bearings. Precision gear, hardened steel shafts. Die-cast aluminum housing with handle. Includes blade-guide insert for splinter-free cutting of plywood, lock-screw bevel adjustment, calibrated cutting guide, 6', 3-wire cord, and 3 blades. U.L. listed as industrial tool. 8¼" L x 7¼" H x 3-11/16" W. 7 lbs.
GDP-303, Mftrs. list $24.95 ... **NET $17.95**



WEN "ALL SAW" MODEL 909, ONLY $32.95
All purpose saw, cuts all metals to ½", pipe and thin-wall to 2", wood up to 6", styrofoam, foam rubber, paper, cardboard, rubber, leather, Masonite, Bakelite, tiles, Formica, wallboard, Plexiglas, plaster board, asbestos. Cuts curves, circles, and patterns. Conventional saw grip with auxiliary grip knob. Blade is in line of sight. Air stream clears dust from cut. Finger control trigger switch. Powerful ½ hp. motor. 3-wire 8' cord with adapter. Weight: 6½ lbs. Heavy duty hardened gears; heavy-duty roller and Oilite bearings. Motor: 110v., 6 amp. AC-DC. Strokes per minute: 3400. Stroke length: 1". Length: 8". Width: 7". Height: 7½". Comes complete with 7 blades, rip guide, circle cutter, and 45° tilting base plate.
GDP-813, 9 lbs.,
Mftrs. list $44.95 ..... **NET $32.95**



WEN "ZIPP SAW" MODEL 920, ONLY $32.95
Versatility unmatched. Cuts anything, anywhere, flush to floor or wall! The flexibility of a keyhole saw with the power of a cross cut saw. No need to finish with handsaw. Cuts wood up to 6", pipe and thin wall to 2". Cuts scrollwork and patterns in Masonite, Bakelite, wood, metals, tiles, Formica, wallboard, Plexiglass, plaster board, asbestos, vertically or horizontally. 3200 one-inch strokes per min. Finger control trigger switch. Conventional saw grip plus auxiliary grip handle. Wt. 5½ lbs. Heavy duty hardened gears; heavy duty roller and Oilite bearings. 1/3 H.P. motor, 115 VAC, 4½ amp.; 3 wire 8' cord with adapter. 9" L x 7½" W x 7" H. Complete with 7 blades.
GDP-823, 7 lbs.,
Mftrs. list $44.95 ..... **NET $32.95**



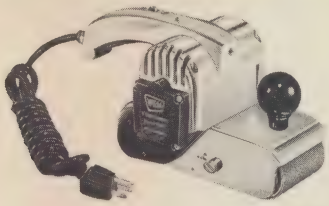
NEW SHOPMATE MODEL 1870 7" POWER SAW, ONLY $29.88
Job-tested. Exclusive Over-Load clutch guards against motor burn-out. New Visa-Port enables you to see the blade while cutting; built-in blower keeps saw-line clear of dust. Sawdust Ejection-Chute directs dust away from operator. Fast cutting action with powerful 1½ hp. 12 amp fan cooled motor (no-load, 5500 rpm; full-load, 3200 rpm). Balanced armature, Life-Weld wiring and precision bearings and gears. Inspection cover removes for cleaning or brush changing. Blade guard has retracting lever for "pocket cuts". Adjustable depth of cut and bevel, to 2⅜" @ 90°, 1⅞" @ 45°. Blade dia. 7" with ⅝" round arbor hole. 6', 3-wire cord & plug. 11½" L x 8⅝" W x 7¼" H. 17 lbs.
GDP-323, Mftrs. list $39.95,
no money dn., $5 mo. ..... **NET $29.88**

These Best Value Tools

INDUSTRIALLY RATED SANDERS AND PLANERS

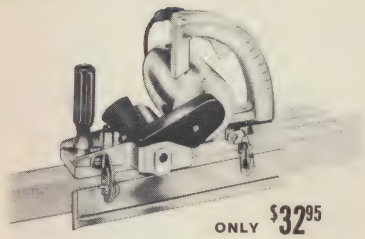
ONLY $17.95

NEW SHOPMATE MODEL 1800 SANDER, ONLY $17.95
This new oscillating sander offers true flush sanding . . . works where others can't, such as on ceilings and floor corners. Ideal for finishing, polishing, sanding, and rubbing of metals, plastics, compositions, and woods. The 3/16" orbital action gives a smooth finish without scoring the surface. Fast! . . . 4500 oscillations per minute by the powerful 1/3 hp., 3 amp. motor. Has direct gear reduction drive, no belts or pulleys. The roller and spherical bronze bearings have protective dust shields. Two quick-change lever clamps keep tension on the sandpaper for long life. Aluminum die-cast housing with mirror finish in the Hex-O-Bal design for easy handling. Concave, slide switch, 6', 3-wire cord. 9¾" L x 7¾" H x 3¼" W. 7 lbs.
GDP-313, Mftrs. List $24.95 ..... **NET $17.95**



ONLY $32.95

WEN 3" BELT SANDER MODEL 910, ONLY $32.95
Does tough sanding jobs easily, quickly. Remove paint, finish rough and worn floors, smooth out walls, do rough and finish work on furniture, boats, lawn furniture, framing, table tops, automobiles. Features polished die-cast aluminum housing with balanced weight design; contour grip handle with slide switch; auxiliary grip knob; 1/3 hp. motor (110V. AC-DC, 4¼ amp.) with 3-wire 6' cord and plug; sealed, permanently lubricated gear train; oversize needle and Oilite bearings; single control tracking adjustment; unique tension design-change belts in seconds; belt speed: 850 S.F.P.M. 5¾" H x 5½" W x 10½" L. Complete with 3 belts, 120, 80, and 60 grit. Net Wt. 7 lbs.
GDP-833, 9 lbs., Mftrs. list $44.95 ..... **NET $32.95**



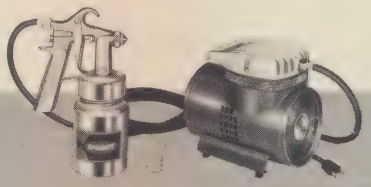
ONLY $32.95

WEN ELECTRIC HAND PLANE MODEL 930, ONLY $32.95
Planes board edges up to 2¼" thick, dresses flat surfaces of hard and soft lumber, bevels at any angle up to 45°. Not an attachment, but a fully integrated tool for precision work. Features polished aluminum housing with air stream chip ejector; cutting width 2⅛", depth adjustable to 1/16"; shoe length: 16"; 6 ampere 120V. AC-DC ⅓ hp. motor with welded burn-out proof armature and 3-wire 8' cord; air cooled cog belt drive; heavy duty Oilite bearings; conventional "saw" grip with trigger switch and auxiliary grip handle; full 2" diam. cutter assembly; twin cutters—each separately adjustable; cutter speed 14,500 rpm.; cutters replaceable at little cost; 16" L x 7½" H x 7¼" W; net wt. 7¾ lbs. Complete with cutters.
GDP-843, 9 lbs., Mftrs. list $44.95 ..... **NET $32.95**

ADD THESE CONVENIENT ACCESSORY TOOLS TO YOUR WORKSHOP

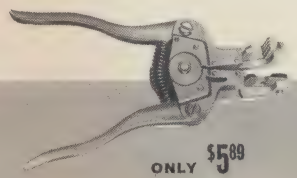
ONLY $18.95

NEW SHOPMATE MODEL 450 UTILITY BENCH GRINDER—ONLY $18.95
Sharpen, shape, or remove rust and foreign matter from metal ceramic, composition, etc. with this sturdy, powerful grinder. Suitable for shop or home, it has a powerful single phase, 115 volt motor that is enclosed to seal out all dust and particles. Equipped with bronze type bearings; "on-off" toggle switch; adjustable tool rests; eye shields; two balanced vitrified wheels of 36 and 60 grit. Wheel size: 4½" dia., ½" wide, ½" round arbor. No load speed 3500 rpm. Wheel clearance: 6½".
GDP-623, 10 lbs., Mftrs. list $27.95 ..... **NET $18.95**



ONLY $29.95

"SPRAYIT" MODEL 600 PAINT SPRAYER, ONLY $29.95
Integrally powered diaphragm compressor unit combines advantages of low pressure spraying with perfect uniformity. Quiet, precision made, with oiless ball bearings; paint strainer; removable air filter; nylon-neoprene compressor diaphragm guaranteed for 1,000 hrs. or 3 years; adjustable all-aluminum spray gun with 1 pint paint cup; one year warranty. Sprays oil, paint, lacquer, stain, varnish, liquid wax, insecticides, weed killers, fertilizers, disinfectants. 8" x 8" x 5" aluminum body; 115v. 60 cycle shaded pole motor, 6' cord, 8' air hose.
GDP-73, 14 lbs., Mftrs. list $39.95 ..... **NET $29.95**



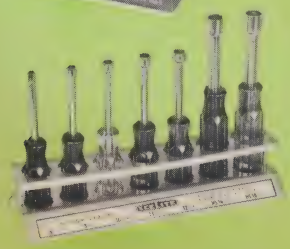
ONLY $5.89

SPEEDEX WIRE AND CABLE STRIPPER MODEL 766-1, ONLY $5.89
Here is a precision tool every workshop should have in its tool rack. Ideal for hobbyists, home craftsmen, mechanics, electricians, and radio servicemen as well as kit builders. No special skill is required to operate it, just insert the wire into its jaws and squeeze the handle . . . the insulation is off in a flash! This heavy-duty mechanism has graduated jaws to accept number 10, 12, 14, 16 and 22 wire. Manufactured by General Cement for rugged service with dependability.
GDP-663, 2 lbs., Mftrs. list $9.95 ..... **NET $5.89**

PROPER TOOLS MAKE KIT BUILDING EASY

HEATHKIT SOLDERING IRON KIT
Includes 6 volt, 25 watt General Electric midget-type industrial soldering iron with iron-clad tip. Power supply is transformer operated; has 4 switch-selected heat ranges plus "off" position; can be connected for high or low line voltage to effectively give you selection of 8 heat ranges. While in holding clip, iron is shielded by "cage".
Kit GH-52, 5 lbs. **$14.95**

WELLER 8200K
DUAL-HEAT SOLDERING GUN
Save time and get professional soldering results in your kit building with this Weller Soldering Gun. Switches instantly from "high" (140 watts) to "low" (100 watts) with Triggermatic control. Pre-focused spotlight illuminates work. Entire kit includes soldering gun, soldering aid, wire cleaning brush, and packet of Kester radio solder. 3 lbs.
Model 490-26 ..... **$5.83**



XCELITE #137 NUTDRIVER SET
For Heathkit building or "fix-it-yourself" jobs around the house. Seven color-coded nutdrivers in a handy self-supporting rack. Tough plastic handles. Polished alloy steel shanks. Contains the following sizes: 3/16", ¼", 5/16", 11/32", ⅜", ½", and 9/16". Shanks are drilled 1¼" deep to allow tightening over long screws. The two largest have hollow shafts for nut installation on controls, switches, etc. 2 lbs.
Model 490-27 ..... **$6.42**

WELLER D-550-PK
HEAVY DUTY SOLDERING KIT,
Professional kit with heavy duty, dual heat 240/325 watt Weller gun. Instant heat, trigger on-off control, twin spotlights, soldering tip, smoothing tip, cutting tip, tip-changing wrench, all-purpose solder, and instruction booklet. Complete with handsome plastic utility case handy for storage of iron and accessories.
GDP-923, 5 lbs., Mftrs. list $12.95,
NET **$9.55**

HEATHKIT BASIC TOOL SET
Provides all the basic tools required to build practically any Heathkit. Kit contains longnose pliers, diagonal sidecutters, two screwdrivers and a 30-watt soldering iron. Pliers and sidecutters are equipped with vinyl insulated handles. All tools are top quality case-hardened steel for rugged duty and long life. Also handy for many repair jobs around the home. 2 lbs.
Model TK-1 ..... **$9.95**

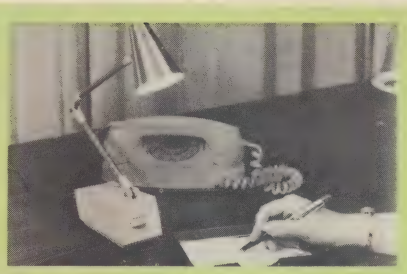
HEATHKIT DELUXE TOOL SET
Here is a fine assortment of quality tools that will make your Heathkit building or any fix-it task easy—and fun! Includes: a combination wire stripper & diagonal sidecutter, midget longnose pliers, three screwdrivers, Weller 8200K dual-heat soldering gun, soldering instruction booklet, solder joint brush, radio solder, 5 nut drivers, nut starter and soldering aid. 6 lbs.
Model GH-10 ..... **$19.95**

Save Most on Home & Hobby

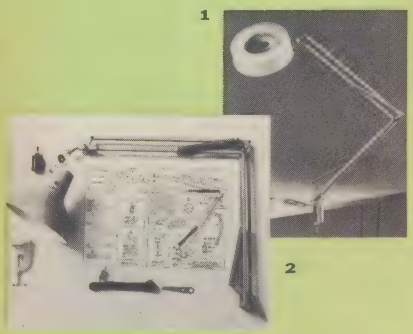
UNIQUE LAMPS FOR EVERY LIGHTING PURPOSE

TUNG-SOL "DYNAQUAD" TOUCH-CONTROL SWITCH, ONLY $13.95
Here's a unique new device that has a wealth of applications for home and industrial use . . . wherever touch-to-turn-on action can be used. The switch is operated by the normal capacity of an object or a person's body . . . capacity is coupled into the circuit by means of antennas which are connected to metal touch points. Absolutely no shock hazard. Employing a new solid-state device, the "Dynaquad," this PNPN germanium alloy transistor acts as an electronic switch that remains off until turned on and stays on until turned off. It has two modes of operation: single pole double-throw, where touching one antenna will turn it on and touching the other will turn it off; or single pole single-throw, where a single antenna is touched for momentary on and goes off when touch is discontinued. Long antennas permit operation from remote locations. Works directly from 105-125 VAC and can handle up to 100 watts. Self-contained in plastic case, 3" x 1¼" x 1½", six leads: two for power, two for load, two for antennas. Useful for home lighting, appliances, burglar alarms, sorting, counting, control, advertising displays, sick room alarms, key-hole lights, etc.
GDP-903, 1 lb., Mftrs. list $14.50, **Net**.....**$13.95**

TUNG-SOL TOUCH-CONTROL LAMP KIT, ONLY $18.95
Touch—it's on, touch—it's off! This lamp responds to the touch of a finger. Easy to assemble; includes a beautifully styled lamp of polished walnut and brass finish and the amazing Dynaquad electronic switch. Silent; operates from any 110v. AC outlet. Kit contains all parts (except shade and bulb) and instructions.
GDP-893, 4 lbs., Mftrs. list $19.95, **Net**.....**$18.95**



TENSOR PRINCESS DECORATOR LAMP, MODEL 7100, ONLY $12.95—Unique miniature lamp with adjustable arm. Ideal for use on piano, organ, desk, etc. Provides soft, confined light area from 12v., 40 beam candlepower bulb; 110v. AC transformer is built into molded beige plastic base with slide switch. Gold finished metal shade and arms. Collapses to 2", extends to 18". Shade is 3" L, 2¼" diam.
GDP-913, 2 lbs.....**$12.95**



1
Z-LYTE MODEL 400 EXTENSION LAMP-MAGNIFIER—ONLY $24.38—SAVE 25%—Gray finished extension combination lamp and magnifier for well-lighted close work. Sightsaver for model hobbyists, the lens has 2-power magnification! Light where you need it, the lens is surrounded by a fluorescent "ring" (bulb not included). Precision 45" arms as above. U.L. approved.
GDP-43, 8 lbs., $32.50 mftrs. list, **Net**.....**$24.38**

2
Z-LYTE MODEL 210 INCANDESCENT EXTENSION LAMP IN KIT FORM—ONLY $9.95—Lowest cost ever! Easiest to build ever! Biggest savings ever! Cut your extension lamp costs in half with this unique lamp kit. It's really a semi-kit, just attach the socket, shade and cord, the precision spring-balanced extension arm is completely assembled when you receive it. Takes about one-half hour for anyone to finish. Has 45" reach, 360° sweep, vented shade, clamps to desk or table. U.L. approved. Less bulb.
GDP-202, 6 lbs., $14.50 mftrs. list, **Net**.....**$9.95**

ELECTROTONE ALL-PURPOSE BATTERY CHARGERS

Big Savings—U.L. Approved—Guaranteed 1 Year

1 ELECTROTONE C-20-M CHARGER, $18.95 LIST, ONLY $9.58 • Ammeter monitor • Circuit-breaker • 2 to 3 Amp. current. Ideal for overnight charging, this compact charger is capable of delivering 3 amps. Uses full-wave high density selenium rectifiers. Has a selector switch for 6 and 12 volt batteries. An ammeter continuously monitors the rate of charge. An automatic-reset circuit breaker provides complete protection of both charger and battery. The "Super-grip" copper-plated clips for direct battery terminal charging will handle 50 amps. The instrument case is louvered for cool operation and has a black anodized handle for easy carrying. **Model GDP-112,** 4 lbs., $18.95 List, **Net Only $9.58**

2 ELECTROTONE C-60 CHARGER, $29.75 LIST, ONLY $14.73 • Professional ammeter • Circuit-breaker • 6 to 8 Amp. current. This heavy duty battery charger will deliver up to 8 amps. Uses full-wave, high density selenium rectifiers. A slide-type switch selects either 6 or 12 volt output. The ammeter continuously monitors the rate of charge. The automatic-reset circuit breaker provides protection for both charger and battery. "Super-grip" copper-plated 50 amp. clips permit direct battery terminal charging. The wrinkle-finish cabinet is perforated for cool operation and has a black anodized handle for carrying purposes. **Model GDP-122**...7 lbs., $29.75 list, **Net Only**.....**$14.73**

3 ELECTROTONE C-100 CHARGER, $56.95 LIST, ONLY $28.68 • Three charge rates • Voltmeter and ammeter • "Off" switch • Charges through cigarette lighter socket • Pilot lights. Here is the battery charger that will fulfill every charging need regardless of battery condition, weather or periods of inactivity. The charge-selector chooses three charging rates . . . "slow" to maintain a fresh battery over long periods of inactivity . . . "medium" for a normal charge to prevent sluggish performance . . . "fast" for the battery that must get going fast (recharges a dead battery in three hours; provides enough charge to start engine in ten minutes). Delivers up to 10 amps. Professional ammeter monitors rate of charge. Voltmeter checks dynamic condition of battery, shows if battery is 6 or 12 volts, and indicates the cut-off setting of the generator. Easy to use, just plug it into the cigarette lighter socket to charge the battery; or use the copper-plated 50 amp clips directly on the battery terminals. 3-way toggle switch selects 6 volt, 12 volt or "off" positions with amber and red pilot light indicators. Selenium Rectifiers. Circuit breaker protection. Louvered cabinet with satin chrome handle.
Model GDP-132...8 lbs., $56.95 list, no money down, $5 mo. **Net Only**.....**$28.68**

SAVE TIME & MONEY WITH CORDOMATIC RETRACTABLE OUTLET REELS & LAMPS

1 CORDOMATIC (510D) PORTABLE OUTLET REEL • Reel provides neat storage of cord when not in use • 15' retractable cord • Locks and retracts automatically • 10 amp rating. Here's a happy solution to your electrical outlet shortage problem. Just plug in cord and carry the 3-way outlet to work area. Provides 3 outlets to operate several appliances, tools or other electrical equipment from the same cord. Cord rewinds after use to eliminate dangling, hazardous extension cords. Ideal for use indoors or outdoors. Quality built for long life. U/L approved.
GDP-32, 3 lbs., mftrs. list $8.95...**Net**.....**$6.72**

2 CORDOMATIC (500) HANDY-LITE REEL • Portable light and electric power • 20' retractable cord • Reel locks . . . retracts automatically • Wall or ceiling mount • Handy electric outlet in handle • Underwriters approved • 7 amp rating. Handy drop cord and light provide light and power where and when you want it. Eliminates inconvenience and hazards of tangled cords. 20' cord pulls out to any length, locks and retracts automatically after using. Reel mounts on wall or ceiling . . . requires no junction box, plugs into nearest outlet. Handy outlet in light handle provides power for portable electric tools, etc. Ruggedly built for lifetime use! For home, workshop, basement, garage, attic, garden or patio. **GDP-22,** 5 lbs., Mftrs. list $8.95...**Net**.....**$6.72**

3 CORDOMATIC (500LA) MULTIPLE-OUTLET REEL • Heavy-duty reel mechanism • Mounts on wall or ceiling • 3-way outlet • Universal swivel mount • U/L approved • 7 amp rating. Handy 20' extension cord stores neatly out-of-the-way when not in use . . . pulls out to provide power for appliances, tools, etc. wherever desired. Gravity mechanism locks cord in position . . . rewinds it automatically out-of-sight. Ideal for use in home or shop. Heavy gauge steel construction for rugged use. 3-way outlet permits operating several appliances from same cord.
GDP-42, 4 lbs., Mftrs. list $7.95...**Net**.....**$5.99**

Accessories with Heathkit®

SPAULDING "STRATO-TOWER" TV TOWERS

Towers are shipped by truck FOB Frankfort, Indiana. No COD orders accepted—send remittance with order. Indicate shipping address (no Post Office Box Numbers if possible). Shipping charges collected on delivery.

1. XCB SERIES, CYLINDER BASE TOWERS—no concrete required, sets into cylinder base—assemble on ground or build up vertically. Self-supporting, high strength, no guys or supports. No welds to rust, all riveted, 100% galvanized steel—beaded channel leg. Low wind resistance at top plus easy rotator installation. Each unit includes cylinder base with self-aligning hinge feet, 8′ mast, a number of factory-assembled 8′ tower sections, and all hardware.

2. EP ECONOMY SERIES TOWERS—zinc-plated steel—mount on ground with house bracket or on roof with guy wires and roof mount accessory. Each unit includes proper number of 8′ tower sections, ground base plate, 8′ mast, mast kit assembly, and drive-in base stakes. No guys needed to 16′ above house bracket. Accessory house bracket and roof mounting base available.

3. RM SERIES ROOF MOUNT TOWERS—easily adjusted to any roof—self-supporting—galvanized beaded channel leg steel. Easily installed, the three hinged feet fit any roof surface; antenna and tower can be erected after assembly. No guy wires needed when feet are securely anchored to roof. Units include 4′ or 8′ tower sections with or without 8′ mast plus mast kit assembly; allow antenna heights of 10′ or 14′ above roof. Shipped knocked-down. Complete with instructions and mast clamp.

Order No.	Mftrs. Type	Ant. Ht.	Tower Sec.	Wt.	Net Ea.
GDP-773-2	X28CB	23′	2	89	$36.63
GDP-773-3	X36CB	31′	3	120	55.78
GDP-773-4	X44CB	39′	4	155	63.76
GDP-773-5	X52CB	47′	5	200	77.59
GDP-773-6	X60CB	55′	6	272	90.33

Order No.	Mftrs. Type	Ant. Ht.	Tower Sec.	Wt.	Net Ea.
GDP-783-1	EP-1	14′	1	25	$15.78
GDP-783-2	EP-2	22′	2	41	23.22
GDP-783-3	EP-3	30′	3	56	29.22
GDP-783-4	EP-4	38′	4	72	36.52
GDP-783-5	EP-5	46′	5	88	43.83
GDP-783-A	EPR-1	Univ. roof base		2	2.88
GDP-783-B	EPH-1	Adj. house bracket		5	3.67

GDP-793-1 4′ roof mt. tower and mast kit assembly, 16 lbs. **Net $6.30**

GDP-793-2, 4′ roof mt. tower, 8′ mast, and mast kit assembly, 23 lbs. **Net $8.40**

GDP-803-1, 8′ roof mt. tower and mast kit assembly, 28 lbs. **Net $11.85**

GDP-803-2, 8′ roof mt. tower, 8′ mast, and mast kit assembly, 35 lbs. **Net $13.95**

Save on TV Antennas—Boosters—Rotors

"Antennas Shipped Express Only"

1 TACO T-BIRD "ELECTRA" MODEL G990-8 ELECTRONIC TV ANTENNA—The world's most powerful electronically-amplified antenna. Gets pictures and sound where others fail! Will receive stations hundreds of miles distant. Best for color, best for black and white, best for multi-set systems. Has antenna-mounted transistorized booster that multiplies the signal. And you can connect your TV set and your FM tuner! Complete, 8 elements and booster, ready to install. Gold anodized and irridiated. 15 lbs **GDP-223**, $107.20 Mftrs. list, no money dn., $7 mo. **Net $62.98**

2 JERROLD ANTENNA PRE-AMPLIFIER APM-101—high gain with low noise transistor circuitry for best TV and FM reception. Works with any TV or FM antenna; preamplifier mounts on antenna, mast, window or wall; power supply mounts on or near receiver. Shielded; weatherproof; dual outputs for use with two sets; up to 18 db gain; impedance 300 ohms; preamp. 2¼ x 6¼ x 3¾″; power supply 4¾ x 3¼ x 1¼″; 110v, 60 cycle, AC. **GDP-773**, 2 lbs., no money dn., $5 mo. **$26.63**

3 TACO T-BIRD MODEL G707-6 TV ANTENNA—Excellent for black & white and color TV; 6 elements; sensitivity controlled to 1 db across channels; gold anodized; "cradle-lok" brackets; irridiated aluminum; T-match system; fiberglass and butyrate insulators; guaranteed 1 year. **GDP-213**, 9 lbs., $46.15 Mftrs. list, no money dn., $5 mo. **$25.84**

4 TACO 4-BAY MODEL 3044 TV BOW-TIE UHF ANTENNA—Popular open vee type with pivot mount for rigid locking to existing mast; heavy mesh screen reflector of galvanized 12 gauge steel with 1″ x 1½″ squares for max. stability and long life. **GDP-233**, 4 lbs., $8.75 Mftrs. list. **Net $5.14**

5 FINCO FM-4G BROAD BAND FM ANTENNA—Twin-drive element with T-match stubs; extra wide-space elements; max. gain across entire FM band; 6 elements; heavy duty square aluminum boom (7′-9″), "lock-tite, no-tilt" wall reinforced aluminum with "Corodoze"gold corrosive-resistant finish. **ADP-103**, 7 lbs., $27.75 Mftrs. list. **Net $16.30**

6 FINCO FM-5 ELEMENT FM ANTENNA—Same features and construction as above except has 10′ boom to accommodate larger number of elements. **ADP-113**, 9 lbs., $36.35 Mftrs. list. **Net $21.35**

7 CLEAR BEAM FM44K FM ANTENNA KIT—Crossed dipoles with matching harness for 360° pattern. With 5′ mast, lead-in wire and hardware. Dura-gold finish. **ADP-52**, 4 lbs. **Net $6.95**

8 CLEAR BEAM D8FMK FM ANTENNA KIT—8 element Yagi (5 directors, 2 driven dipoles, 1 reflector). With 5′ mast, lead-in, and hardware. Dura-gold finish dipoles. **ADP-62**, 10 lbs. **Net $12.50**

9 NEW BLONDER-TONGUE BTU-2T UHF TV CONVERTER—With RF amp for up to 8 db gain; dual speed selector covers ch. 14-83; output on ch. 5 or 6; easy to install at TV set; requires UHF antenna. **GDP-713**, 4 lbs., Mftrs. list $44.95. **Net $29.65**

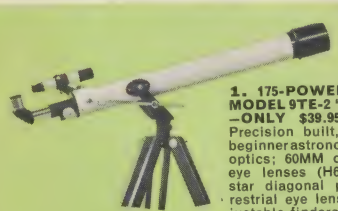
10 NEW BLONDER-TONGUE BTC-99S UHF CONVERTER—3-section tuner for class A signal areas; tunes ch. 14-83; output on ch. 5 or 6. **GDP-703**, 3 lbs., Mftrs. list $27.95 **Net $19.35**

11 PERFORMANCE-PROVEN BLONDER-TONGUE FM/TV SIGNAL BOOSTER (BTA)—Better FM or TV reception at lowest cost! Provides 7 to 9 db boost in signals for fringe area sets. Input and output: 300 ohms. Easy to connect. 2½″ x 6¼″ x 3¾″, 2 lbs. **GDP-321** **Only $10.30**

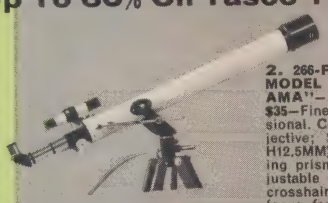
12 PERFORMANCE-PROVEN TRANSISTORIZED BLONDER-TONGUE FM/TV BOOSTER (IT-4)—Dependable, trouble-free signal booster. Accepts up to four FM and TV sets simultaneously. 300 ohm input & output. Easy to install. 1½″ x 6¼″ x 3¼″, 1 lb. **GDP-331** **Only $19.40**

13 MORAN "SUPEROTOR" M-500 TV/FM ANTENNA ROTATOR—ONLY $22.25—SAVE $22.70! Rotates antenna toward stations with pin-point accuracy for maximum signal reception! Mahogany plastic case; easy to operate . . . features bar-type switch, pointer-type N-E-S-W-N- compass dial; dial lights up when antenna turns. The rotator unit makes a complete revolution in 60 seconds. All-steel gears and bronze bearings are factory lubricated for life. Self-centering chuck grip takes up to 1¾″ upper mast. Uses standard 4-wire gauge cable. 10 lbs. **GDP-243** . . . $44.95 Mftrs. list. **Net $22.25**

Save Up To 60% On Tasco Telescopes



1. 175-POWER TELESCOPE MODEL 9TE-2 "STARBRITE"—ONLY $39.95, SAVE $10—Precision built, perfect for the beginner astronomer. Hard coated optics; 60MM objective lens; 2 eye lenses (H6MM, H12.5MM); star diagonal prism; 1.5X terrestrial eye lens accessory; adjustable finderscope with cross hairs; sun filter; rack & pinion focusing; micro altitude adjustment; all metal alum. tube, metal accessory tray; sturdy hardwood tripod, instructions and attractive gift box. **GDP-253**, 13 lbs., $49.95 Mftrs. list, no money dn., $5 mo. **Net $39.95**



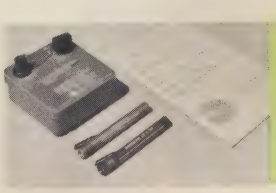
2. 266-POWER TELESCOPE MODEL 12TE-2 "SOLARAMA"— ONLY $54.95, SAVE $35—Fine for student or professional. Coated optics; 60MM objective; 2 eye lenses (H6MM, H12.5MM); 2X Barlow lens; erecting prism; diagonal prism; adjustable 5x24 finderscope with crosshairs; sun filter; quick focus feature; rack and pinion fine focusing; micro altitude adjustment; micro azimuth adjustment; aluminum tube; adjustable tripod; accessory lens tray; instructions; wood carrying case; gift box. **GDP-263**, 21 lbs., $89.95 Mftrs. list, no money dn., $6 mo. **Net $54.95**

Finest of Japanese Imports

3. 300-POWER REFLECTING TELESCOPE MODEL 11 TEA "LUNAGROSSO" — ONLY $79.95, SAVE $50. Features 900-MM focal length 4½″ parabolic mirror, two TASCO quartz mirrors, 45X and 150X eyepieces, 5X finderscope, sun and moon filters, 2X Barlow lens which doubles eyepiece powers, heavy duty tripod with equatorial mount and flexible controls for easy adjustment and tracking, and metal dust cover. **GDP-273**, 28 lbs., $129.95 Mftrs. list, no money down, $8 mo. **Net $79.95**

HOUSEHOLD EMERGENCY GEAR

ZEUS PORTABLE KILOWATT ELECTRIC GENERATOR, MODEL ASP-1000, ONLY $169.95
For standby power, on-the-job power, emergencies, amateur radio field days, camping, the Zeus provides electricity anywhere, anytime. Trouble-free generator uses permanent magnet alternator—no brushes, no armature windings, no belts, no slip rings, or commutators; reduces radio noise to minimum. Just one moving part, the permanent magnet alternator. Output 1000 watts, 115 v., 60 cycles, 8.7 amps., single phase, 2 wire. Outlet three prong plug. Powered by single cylinder Briggs & Stratton Model 80502 2.5 H.P., 4 cycle gasoline engine (2¾″ bore, 1¾″ stroke, 7.75 cu. in., 3600 rpm) with recoil starter. Oil capacity 1¼ pints; fuel capacity 1 quart (uses 1 quart per kilowatt hour). Air vane type governor automatically regulates voltage and frequency of generator output. Air cleaner has oil-foam "no-spill" feature with washable polyurethane element. Muffler is low tone silencer for 33⅓ less noise. Size: 15″ H x 13⅛″ W x 13″ D. Wt. 63 lbs. Put this handy generator in your home for fun and complete safety. **GDP-933**, 65 lbs., Mftrs. list $197.50, **Net $169.95**



Family Radiation Counter

BENDIX MEASUREMENT SET—Simple, rugged, direct-reading, pocket-size, factory assembled. Ratemeter (0-120 R/hr., 0/12 R/hr.); Dosimeter measures total (0-600 roentgens); Charger to reset instruments.

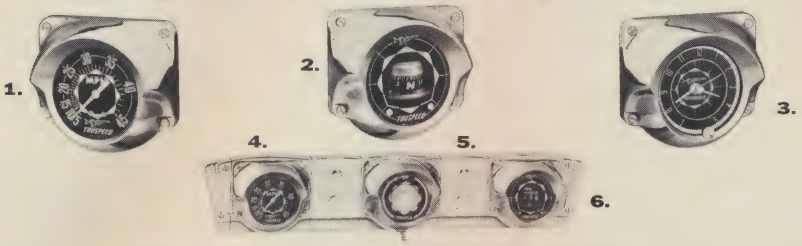
GDP-341 Complete Set: . . . 3 lbs. . . . no money down, $5 mo. **$24.95**

GDA-341-1 Dosimeter only . . . 1 lb. **$11.25**

GDA-341-2 Ratemeter only . . . 1 lb. **$11.25**

Money Saving Marine & Camping Gear

"Truspeed" Marine Instruments Put Custom Styling Aboard Your Boat at Big Savings



Add the Smart, Distinctive "Truspeed" Look
Save up to 30%!

• Modern visor styling • Durable outdoor chrome plating • Crowned plexiglas crystals • Die-cast bezels • Precision movements • Everything included • Easy to install • Will mount individually or with sectional panels for integrated custom appearance

1. TRUSPEED MODEL S206-45 MARINE SPEEDOMETER—ONLY $7.95. Time proven "Progressive Movement" has increasing scale graduations for easy high speed reading and accuracy. "Visor" styled die-cast case with easy-to-read black dial with white numerals and red trim. Comes complete with pitot tube, transfer tubing, tubing clips, and all fasteners. Surface mounts with just screw driver and small drill. Back connection only. **MDP-43,** 2 lbs., $11.60 mftrs. list, **NET $7.95**

2. TRUSPEED MODEL C180-15 MARINE COMPASS—ONLY $7.95 Best quality with powerful cunife type magnets in both dial and compensator. Army-Navy specifications suspension fluid. Balanced dial assembly. Vernier adjusting compensator, can be used on wood, metal, or fiberglass boats. "Visor" styled die-cast case with easy to read dial in white and red. Panel mounts at angles to 15°. **MDP-33,** 2 lbs., $11.50 mftrs. list, ... **NET $7.95**

3. TRUSPEED MODEL CL-150 MARINE CLOCK—ONLY $19.45 Styled to match other Truspeed instruments and the panel. High quality movement, easily set by front adjusting shaft. Sweep second hand for easy navigating; automatic slow-fast adjustment. Runs continuously, electrical impulse wound, negligible current requirements. Lighted, 12 volt. **MDP-53,** 2 lbs., $26.95 mftrs. list, **NET $19.45**

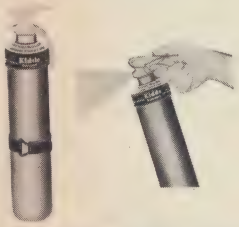
TRUSPEED MOUNTING PANELS—CUSTOM STYLING WITH STANDARD COMPONENTS

4. TRUSPEED CHROME INSTRUMENT MOUNTING PANEL for any of above instruments, one required for each instrument. Complete with screws, wires and bulb for illuminating instrument. **MDP-73,** 1 lb., $2.49 mftrs. list, ... **NET $1.75**

5. TRUSPEED CHROME PLAIN PANEL for "do-it-yourself" panel designs. **MDP-83,** 1 lb., $2.30 mftrs. list, ... **NET each $1.55**

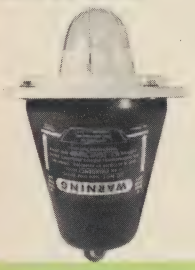
6. TRUSPEED CHROME END CAPS to complete panel installation. **MDP-63,** 1 lb., $2.60 mftrs. list, ... **NET pair $1.95**

UPSON/RUGBY LANTERN—waterproof, shockproof, rustproof, unbreakable. Guaranteed. Plastic lens with adjustable sealing ring for diver's use. Uses 6 v. battery, Eveready #509 or equiv., not included.
MDP-61, 3 lbs. **$10.50**



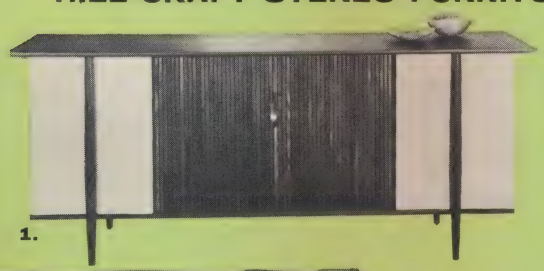
KIDDE KOMPACT FIRE EXTINGUISHER MODEL 2½ DCK—combines dry chemical agent with pressurization. Handle with finger control. Capacity 2½ lbs. UL rating 4-B:C. Approved U. S. Coast Guard and I.C.C. **MDP-12,** 5 lbs., **$10.99** **MDP-22** refill, **$3.95**

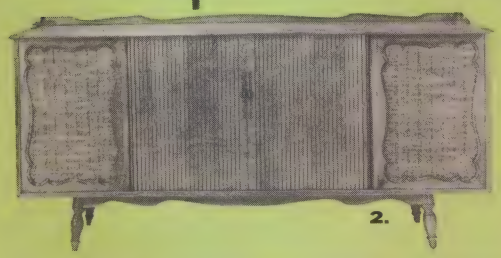
TRANSRALITE AUTOMATIC MARINE RADIO TRANSMITTER & SIGNAL LIGHT—$99.50
Automatically broadcasts your position two ways within 30 seconds of trouble. If your boat capsizes or sinks, Transralite floats free, rights itself and automatically begins transmitting your position to U. S. Coast Guard and all monitoring stations on the International Distress Frequency of 2182 kc. At the same time, a flashing neon light alerts ships up to 15 miles away and planes within a 50 mile radius. Both signals work continuously for 15 days. Hermetically sealed in indestructible resins with plexiglas and royalite container. Guaranteed for 12 months of boating operation. Operates on 2-6 v. batteries. Broadcasts on 2182 kc. with frequency alternating between 2200 and 1300 cps, the world standard distress signal. Complete with cradle for mounting aboard your boat.
MDP-123, 8 lbs., no money down., $10 mo. **$99.50**

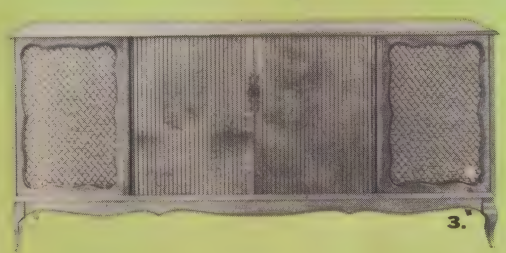


TAKE A REFRIGERATOR WHEREVER YOU GO—ONLY $49.95. SAVE $15. Enjoy the luxury of cold beverages and safely stored foods no matter where you are. Fishing, boating, hunting, camping or picnicing . . . trailer, motel, hotel, or cabana . . . dens, recreation rooms, or patios . . . hospitals, labs . . . permanent and field offices. Completely silent, this maintenance-free unit has no moving parts; it uses a self-contained absorption type cooling system, hermetically sealed; maintains a temperature 50° below the outside ambient temp. The high impact molded plastic case has modern foam insulation; weighs just 18 lbs.; measures just 14¾" L x 12¼" W x 13½" H. Holds 15 lbs. of your favorite food or beverage. Power requirements: 12 v. battery @ 3.7 amps (equivalent to auto parking lights) or 110 v. AC. Comes complete with 2 cords, one 12' to plug into auto cigarette lighter, and one 6' for 110 v. AC outlet. U.L. approved. Warranted for 3 years!
MDP-23, 21 lbs., $64.95 mftrs. list, no money down, $5 mo. ..... **NET $44.95**

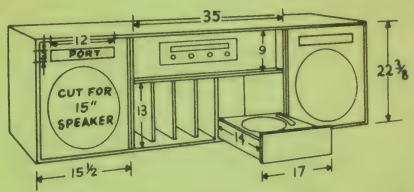
HILL-CRAFT STEREO FURNITURE—200 SERIES—AS LOW AS $199.95







Save Up To 34%



Beautiful stereo/hi-fi cabinets, expertly crafted of selected woods . . . American Walnut in the Contemporary model, clear cabinet-quality white birch in the Early American and Provincial models. Joints are mitered with splines and electronically welded to stay tight under the most severe weather changes. Only first quality furniture grade finishes are used. All are spray applied and each coat is thoroughly dry and hand sanded before the next coat is applied. Each piece has a minimum of four applications. Painstaking time and effort goes into each Hill-Craft cabinet. Uncut panel space in each cabinet is provided for tuner, amplifier, record player and record storage (or tape recorder) . . . accessible through sliding tambour doors (1⅞" available between panel and doors for knobs, etc.). Drawers have ballbearing slide. Speaker compartments have 3" x 12" port covered by removable board for use as bass reflex or infinite baffle; treated with fiberglass with cubic content of approx. four feet; speaker cutouts are for 15" speakers with adapter boards for 12" units. Inside dimensions: tuner, amp. panel area: 35" x 9"; changer drawer: 14" x 17"; speakers: 22⅜" x 15½". Record storage partitions are removable. Hill-Craft cabinets are designed for those who want the finest at appreciable savings; **send for descriptive brochure.**

1. HILL-CRAFT MODEL 201H CONTEMPORARY STEREO CONSOLE—ONLY $199.95
Walnut with flat sable lacquer finish. Size: 76" L x 32" H x 19½" D. 180 lbs., shipped collect from California.
Order No. ADP-183, $296 list, no money dn., $19 mo. ..... **NET $199.95**

2. HILL-CRAFT MODEL 203H EARLY AMERICAN STEREO CONSOLE—ONLY $227.75
Salem finish in a butterscotch shade. Size: 74" L x 32" H x 18" D. 180 lbs., shipped collect from California.
Order No. ADP-193, $332 list, no money dn., $22 mo. ..... **NET $227.95**

3. HILL-CRAFT MODEL 204H PROVINCIAL STEREO CONSOLE—ONLY $241.50
Light rubbed fruitwood finish; brass wire grilles over speaker cloth. Size: 74" L x 31" H x 18" D. 180 lbs., shipped collect from California. **Order No. ADP-203,** $350 list, no money dn., $23 mo. ..... **NET $241.50**

Low Cost Radios, Phonos, Recorders

Best Buy Portable Phonographs

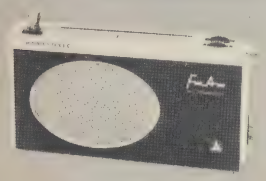
Arvin Model 72P33 Portable Radio-Phono Combination—Only $25.46
The convenience of a portable radio plus the fun of a 4-speed phonograph! This versatile unit includes an Arvin 5-tube AM radio plus a 4-speed manual phonograph. Front-mounted speaker and controls (on/off-volume and radio tuning). Phono has replaceable dual sapphire needle and 45 rpm pop-up spindle. Lever speed selector for 16, 33-1/3, 45, and 78 rpm. Scuff-resistant red and silver pyroxylin-covered wood cabinet. AC operated. Not a kit.
GDP-733, 12 lbs., Mftrs. List $29.95, no money dn., $5 mo. **$25.46**

Arvin Model 82P15 Portable 4-Speed Phonograph—Only $16.96
Lowest priced, quality-performing phono. Plays 16, 33-1/3, 45, and 78 rpm records. Front-mounted 5" speaker and control knob (on-off/volume). Dual sapphire styli in turnover cartridge. 45 rpm pop-up spindle. Printed circuit board electronics. Durable, scuff-resistant pyroxylin wood case in surf turquoise and white. AC operated. Size: 12" wide, 9½" deep, 5¾" high. Weighs just 8 lbs. for easy carrying. Not a kit.
GDP-743, 8 lbs., Mftrs. List $19.95 ..... only **$16.96**

Arvin Model 81P23 Portable 4-Speed Automatic Phonograph—Only $42.48
Convenience and quality at a low price. This compact monophonic phono features a precision VM 4-speed automatic changer (16, 33-1/3, 45 and 78 rpm) with featherweight tone arm, sensitive cartridge and sapphire styli. Twin, front-facing 4" speakers for greater fidelity. Front-mounted tone and volume controls. Circuit board electronics. Wood case covered in red and gray pyroxylin. AC operated. Size: 16" wide, 15¼" deep, 9¼" high. Not a kit.
GDP-723, 20 lbs., Mftrs. List $49.95, no money dn., $5 mo. **$42.48**

Arvin Model 81P68 Portable Stereo 4-Speed Automatic Phonograph—Only $50.96
The realism of stereo for the price of an ordinary phonograph, Two 4" speakers, separately mounted in cabinet and lid. Lift off the removable lid and relocate up to 15' away for maximum stereo effect. Automatic 4-speed VM changer with dual sapphire styli. Twin volume controls, front-mounted, control each channel. Circuit board electronics. Wood cabinet covered with sandalwood and beige pyroxylin. AC operated. Size: 16" W x 15¼" D x 9¼" H. Not a kit.
GDP-753, 20 lbs., Mftrs. list $59.95 no money dn., $6 mo. **$50.96**

Best Values in Imported Transistor Portable Radios

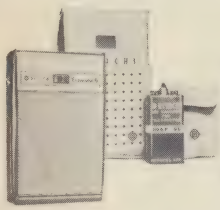


PANASONIC FM/AM TRANSISTOR PORTABLE MODEL T-81, ONLY $49.95
8-transistor, 4-diode circuit tunes FM and AM bands. Telescoping FM antenna and rod antenna for AM. 4" x 2½" speaker; tone sw.; local-distant sw.; tuner output jack; external AM antenna jack; earphone jack; external power jack; with 4 "AA" cells & earphone. Size: 7⅞" x 3⅝" x 2"; black & silver finish. **GRP-93,** 4 lbs. Mftrs. list $59.95 ..... **Net $49.95**

HITACHI MARINE/AM TRANSISTOR PORTABLE MODEL WH-829MB, ONLY $34.95 8-transistor, 2-diode, 1-thermistor circuit tunes AM 535-1605kc and Marine 1.6-4.5 mc; telescoping antenna and rod antenna plus external antenna jack; 3½" x 2¼" speaker; fine tuning control; tone control sw.; earphone jack; complete with 3 batteries, leather case, strap, and earphone. Size: 6¼"x3-9/16"x1-7/16"; nautical two-tone case.
GRP-73, 4 lbs., Mftrs. list $59.95 ..... **Net $34.95**

VISCOUNT FM/AM TRANSISTOR PORTABLE MODEL 1130 ONLY $49.95 11-transistor, 6-diode circuit tunes entire AM and FM bands; built-in AM and two FM telescopic antennas; AFC with sw.; tone sw.; 3½" speaker; 2 earphone jacks; complete with earphone and 4 "C" cells. Size: 6¼" x 10" x 2¾"; black cowhide case with aluminum and chrome trim.
GRP-33, 4 lbs. ..... **Net $49.95**

VISCOUNT 4-BAND TRANSISTOR PORTABLE MODEL 840, ONLY $59.50 8-transistor, 3-diode circuit tunes AM 540-1600kc, Short-wave 4-12 mc, Marine 1.6-4.5 mc, and low frequency navigation 150-300kc. Has 2 built-in rod antennas, and 1 telescopic antenna; earphone jack; tone control; fine tuning; battery and tuning meter; rotatable compass rose; 3½" speaker; black leather case 6½" x 10" x 2¾"; with earphone and 4 "C" cells.
GRP-83, 4 lbs. ..... **Net $59.50**



HITACHI AM TRANSISTOR PORTABLE MODEL TH-650, ONLY $12.88
6-transistor, 1-diode, 1-thermistor circuit tunes the entire AM standard broadcast band; has 2" PM speaker, magnifier tuning dial for easy station selection; built-in rod antenna; earphone jack for private listening; comes complete with earphone, one 9 volt battery, and two leather carrying cases. Shirtpocket size: 3⅛" x 2¼" x 1¼". Black high impact cabinet. **GRP-63,** 2 lbs., Mftrs. list $19.95 ..... **Net $12.88**

VISCOUNT AM TRANSISTOR PORTABLE MODEL 632, ONLY $14.95
6-transistor, 1-diode circuit tunes AM standard broadcast band. Uses new high efficiency transformerless output circuit; 2" PM speaker; powered by two inexpensive penlite cells. Black and gold high impact cabinet is shirtpocket size: 3-5/16" H x 2½" W x 1" D. Comes complete in presentation box with earphone, black leather carrying case, and two batteries.
GRP-23, 1 lb. ..... **Net $14.95**

Audiophile Recording Mixers

1 SWITCHCRAFT 4-CHANNEL TRANSISTOR STEREO-MONO MIXER MODEL 306TR, ONLY $22.05. Four input, high impedance mixer with built-in battery powered all-transistor amplifiers in each of two stereo channels. Switch permits use for either stereo or monophonic mixing; in stereo position, two inputs can be used in each channel; in monophonic position; four inputs can be used and the outputs are common. Amplifiers overcome usual loss encountered in resistance type mixers and actually provide a 6 db gain. Permits use of microphones up to 30 feet from recorder or amplifier. Low noise level, low distortion response, 20-20,000 cps. Accepts signals up to 1.5 volts from microphones, tuners, phonos, etc. On-off switch to shut off amplifiers when not in use to lengthen battery life. Input jacks accept standard 2-conductor phone plugs; output jacks accept standard 2-conductor phono plugs; jacks are located on back of unit, no interference with volume controls. Modern styling in tan finish with brown knobs with gold inserts. Rubber feet prevent scratching finished surfaces. Mixer is supplied with 9 volt battery. **ADP-643,** 2 lbs. Mftrs. list $37.50, ... **Net $22.05**

2 SWITCHCRAFT 4-CHANNEL RESISTANCE TYPE STEREO-MONO MIXER, MODEL 306, ONLY $13.23. Similar to model 306TR except without the transistor amplifiers, for use where a minimum loss is not objectionable. No power is required. Has same inputs and features for stereo-mono use. **ADP-633,** 2 lbs., Mftrs. list $22.50 ..... **Net $13.23**

Save Up To 23% on Imported Tape Recorders

PANASONIC RQ-114 TRANSISTOR PORTABLE TAPE RECORDER, ONLY $99.95. All transistor; records half-track monophonic at 3¾ & 1⅞ ips; controls include volume, tone, rewind, stop, playback, record, fast forward; provision for external monitor; capacity 3" reels; built-in amplifier, speaker recording meter and battery condition indicator; supplied with mike, earphone, carrying cases for recorder & accessories, 12 pen-lite batteries, empty reel, recording tape & splicing tape. **GDP-193,** 9 lbs., Mftrs. list $129.95, no money down, $10 mo. ..... **Net $99.95**

PANASONIC RQ-700 HIGH FIDELITY TAPE RECORDER, ONLY $114.95. Records half-track monophonic at 3¾ & 7½ ips; controls include volume, tone, rewind, stop, playback, record, fast forward, and digital tape counter; provision for external 8 ohm monitor; capacity 7" reel; built-in 2-input amplifier with 6" x 4" speaker; recording meter; monitor, while recording, with speaker or earphone. Beige and ivory plastic case measures 7¼" x 13½" x 12". Comes complete with microphone, patch cord and empty 5" reel. 110-125V., 60 cycles, 50 watts. **GDP-943,** 31 lbs., Mftrs. list $139.95
Net **$114.95**

2 NEW UNITS JOIN HEATHKIT

World's BIGGEST Citizen's Band Line

New "Marine" Citizen's Band Two-Way Radio —$89.95—page 5

THROUGH HEATH NEW RESEARCH

$89.95

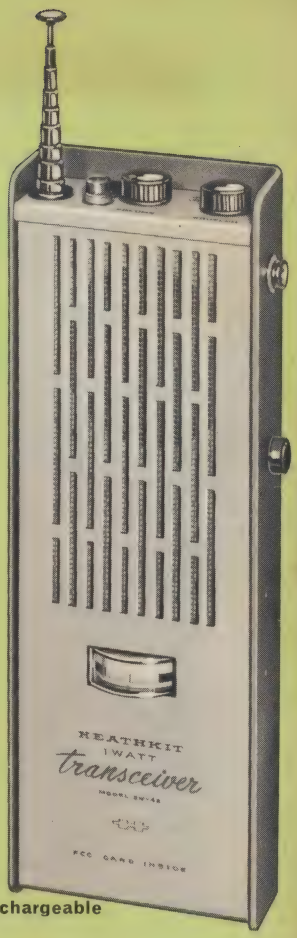
- Styled to match Heathkit Marine gear
- Efficient transmitter for extra range
- RF stage for long-distance reception
- 5 crystal-controlled transmit-receive channels
- All-channel variable receiver tuning
- Built-in squelch & noise limiter
- Crystal filter for greater selectivity
- 3-way power supply—6 or 12 VDC or 117 VAC

New 1-Watt "Walkie-Talkie"— Only $74.95 Each— $139.95 A Pair —page 3

$74.95 ea.

$139.95 a pr.

THROUGH HEATH NEW RESEARCH



- Price includes powerful $20 rechargeable nickel-cadmium battery
- Rugged 10-transistor, 2-diode circuit
- 1-watt input to transmitter final stage
- Sensitive superhet receiver—½ uv for 10 db s/n ratio
- Crystal controlled transmit & receive
- Built-in squelch & noise limiter
- Built-in battery recharger
- Ideal for industry and sportsmen

All prices quoted are Net F.O.B. Benton Harbor, Michigan and apply to United States and Possessions only.
Prices and Special Offers herein effective March 1, 1963.
All prices and specifications subject to change without notice.
Dealer and export prices slightly higher.

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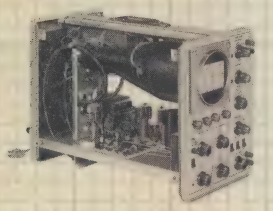
MARCH 1966

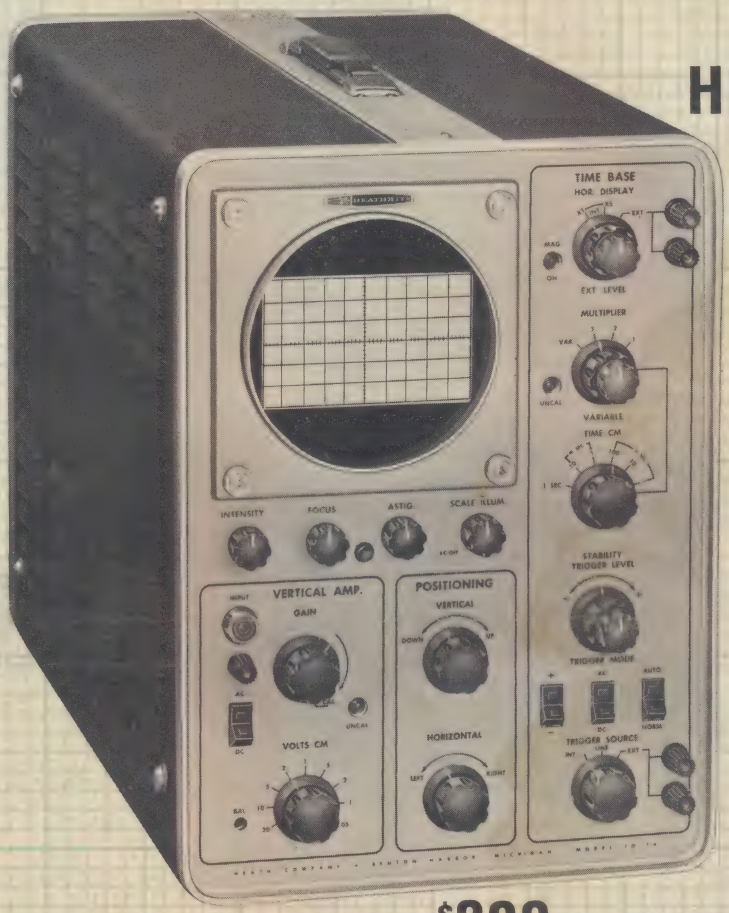
Introducing The World's Best Buy In DC Scopes . . . The New HEATHKIT® IO-14



Sharpest Trace—assured by 4,250v. accelerating potential and high-nickel alloy CRT shield. **Matched, Magnetic-Core Delay Lines**—precision, cable type, for fast rise-time pulse work.

Rear Access Door—for direct plate connections. **Circuit Breaker**—for complete protection. **Z-Axis Terminals. 3-Wire Line Cord**—with holders. **Fan Cooling**—with blade guard.

Easy To Build—5 circuit boards and wiring harness. **Rugged**—heavy-duty transformer—forced-air cooling—"U" girder, all-aluminum construction for rigidity.



- DC to 8 mc bandwidth
- Sensitivity 0.05 v/cm AC or DC
- Rise time 0.04 microseconds
- Precision delay line of 0.25 microseconds
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- 18 triggered sweep rates from 0.5 sec/cm to 1 microsecond/cm
- Five-times sweep magnifier extends sweep rate to 0.2 microsecond/cm
- Forced-air ventilation for continuous duty
- Electronically regulated power supply

Kit **$299** (available April)

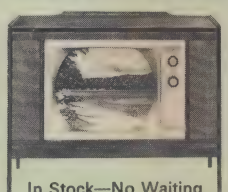
Factory Assembled **$399** (available May)

Full Details on Page 42

GOOD NEWS

21" Color TV Kit Now Ready for IMMEDIATE DELIVERY

No reservations needed.



In Stock—No Waiting

Send Your Order Now. See pg. 3

SPECIAL OFFERS

1. *Free* walnut cabinets with AJ-43D and AA-21D combination order. See pg. 20
2. *Free* GH-52 Soldering Iron with AJ-41 and AA-100 or AJ-32 and AA-151 combination orders. See pg. 23
3. *Free* earphones and world shortwave book with GR-54 radio order. See pg. 8
4. *Save Up To 14% On Complete Marine Radiotelephone Systems!* See pgs. 12-13
5. *Save 5% On Music Systems.* See pgs. 18-30
6. *Save 5% On 2 or More 5-Watt CB Transceivers!* See pgs. 10-11

NEW PRODUCTS THIS ISSUE

1. Deluxe 5" DC 'Scope; pg. 42 & above
2. Part B of the Berkeley Physics Lab with new microwave equipment; pg. 41
3. 21-Speed Electronic Drive for Heath Servo Chart Recorder; pg. 38
4. Dropping Mercury Electrode apparatus for Heath Polarography System; pg. 39
5. Ham radio speaker styled to match deluxe SSB gear; pg. 34

Heath Company • Benton Harbor, Michigan 49022

Plant Location: St. Joseph, Michigan • Catalog Supplement 800/62

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NEWS AND VIEWS OF
HEATHKIT®

SHOW YOUR ADDRESS ON CORRESPONDENCE

When writing to us for any reason, please show your complete address on your letter. Envelopes occasionally become separated from correspondence, and we cannot always locate your address in our files. As a result, some letters may be delayed, or unanswered.

STOPPING BY FOR FACTORY SERVICE?

If you have a Heathkit that needs servicing, and you would like to drop it off at our plant, our Service Department is open Monday thru Friday, 8 A.M. to 4:15 P.M. E.S.T. If you can't make it during the week, you may leave it with our Sales Representative on Saturdays at our plant Kit Sales/Show Room, which is open 9 A.M. to 3:30 P.M. We suggest that a written description of the problem be attached to the unit—*be sure* to include date kit was purchased. Repaired equipment & replacement parts can also be picked up at the Kit Sales Room on Saturdays, *only* if prior arrangements are made with the Service Department. Be sure that all arrangements are clearly understood.

Also, don't forget about the Heathkit Electronic Center and authorized Service Center facilities (see list below). They are fully staffed and equipped to handle any parts or service problem . . . either by mail or across the counter. If there's one in your vicinity, take advantage of it . . . you'll receive faster attention to your needs.

JOB OPPORTUNITIES—ENGINEERS & TECHNICIANS

Due to expansion, we now have job openings in our Service and Engineering departments for technicians and engineers. We offer good salaries, liberal employee benefits, and a pleasant working atmosphere in our modern plant located on the eastern shore of Lake Michigan. Excellent school, shopping and recreational facilities. You'll live within minutes of work. If interested, write to: W. F. Donahue, Director of Personnel, Heath Company, Benton Harbor, Michigan 49022.

OFF TO MORE SHOWS WE GO!

During the months of March and April, we will exhibit various Heath products at the following special interest and trade shows. If you plan to attend any of these, be sure to stop by and see us. Personnel from the Heath Company plant will be on hand to answer your questions.

March 21-24—Institute of Electronics & Electrical Engineers (IEEE) Show at the Coliseum, New York City—all Heathkit products.

April 1-5—1966 National Science Teachers Association Convention, New York Hilton, New York City—IMPScope, Heath Berkeley Physics Lab Parts A & B, Servo-Chart Recorder, power supplies, Basic electronic courses, and "How To . . ." Instrument Application series.

April 12-15—Federation of American Society For Experimental Biology Meeting, Convention Hall, Atlantic City, New Jersey—IMPScope, new IO-14 Oscilloscope (see page 42), Polarography System, Multi-Speed Chart Drive, Malmstadt-Enke Lab, and the pH Meter.

April 21-24—1966 American Radio Relay League (ARRL) National Convention, Sheraton-Boston Hotel at the Prudential Center, Boston, Mass.—all Heathkit amateur radio gear.

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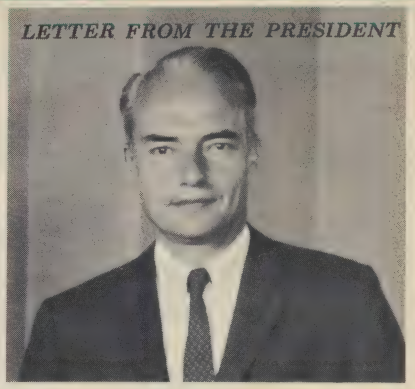
Days, call Area 616, 983-3961
Nights, call Area 616, 983-3921
Give all information, we will ship C.O.D. After 8 P.M. call Heath from anywhere in the continental U.S. (except Alaska) for $1 or less.

DO YOU HAVE AN FCC COMMERCIAL PHONE OR TELEGRAPH LICENSE?

If you hold a current, valid FCC Commercial First Class Radiotelephone or First Class or Second Class Radiotelegraph license, we would like to hear from you. A postcard will do—just address to Neal Turner, Heath Company, Benton Harbor, Mich.—and tell him what license you hold.

LETTER FROM THE PRESIDENT



Dear Friends:

Customer good will depends on so many facets of a business that at any given time it is hard to determine from the customer mail whether we are gaining or losing in the all-important struggle for good-will. It's like the caterpillar who was asked as he stood at the door of the psychiatrist's office . . . "Are you coming or going?" Said the caterpillar "If I knew that I wouldn't be here."

For instance, in 1965 we shipped out more kits on time than ever before. We also shipped more kits late than ever before.

We were in good shape on shipments until November when a quality problem developed. A supplier notified us that some defective material might have gotten into a recent shipment to us. We had three suppliers for this particular part which is used in over 100 different kits. Which kits in our stock contained this manufacturer's component? We did not know; so we opened every kit, extracted the part, and substituted another.

Naturally, shipment was delayed on these kits and a lot of loyal customers were disappointed with Heath's delivery service. But to my knowledge, not a single one was disappointed with Heath quality. Which way did the good-will pointer move? See you at the psychiatrist's.

Sincerely,
C. M. Kirkland, President

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San Francisco, California

Photo Electronics
1300 Market Street
San Diego, Calif.

Southern Authorized Factory Service
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Expert Electronics
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Park Armature Company
1218-30 Columbus Ave.
Boston, Mass.

Electronic Servicenter of N.Y.
65-37 Queens Blvd.
Woodside, New York

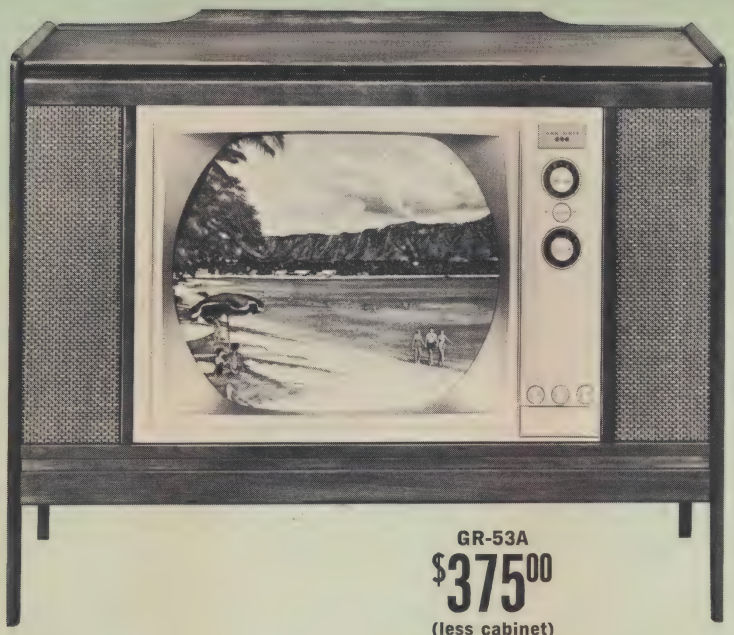
Scientific Radio-TV/HI-FI (two locations)
4122 E. Madison St.
Seattle, Washington
&
5418½ Sand Point Way N.E.
Seattle, Washington

All Heathkit Electronic Centers and Authorized Service Centers are units of Daystrom Products Corporation

Heath Company, Benton Harbor, Michigan—Plant Location: St. Joseph, Michigan
Affiliated Companies: Daystrom Ltd., Cooksville (Toronto) Canada • Daystrom Ltd., Gloucester, England • Heathkit Gerate GmbH., Sprendlingen Bei Frankfurt/Main, Germany • Daystrom S.A., Geneva, Switzerland • Daystrom S.A., Zurich, Switzerland • Daystrom Overseas GmbH., Vienna, Austria

Heathkit® 21" Color TV Available Now!

No Reservation Needed—Immediate Delivery!



GR-53A
$375.00
(less cabinet)

Only 21" Color TV You Can Install 3 Ways!

1. In a wall
2. In your custom cabinet
3. In either Heath factory-built cabinet

Factory Assembled Deluxe Cabinet (Opposite) . . . matches Heath contemporary hi-fi cabinetry (p. 26). Fits within 3" of wall. Quality crafted of ¾" walnut solids and veneers with a hand-rubbed finish. Includes special hi-fi 6" x 9" speaker with 6.8 oz. mag. to give you 2-speaker performance with GR-53A chassis (speakers mount behind grille cloth). Size: 44" W x 32⅜" H x 23⅝" D (26½" including tube rear cover). See below for Heath economy cabinet.

Assembled GRA-53-7, 82 lbs.
No money down, $11 month. **$108.00**

Exclusive Built-In Self-Servicing . . . Versatility Of Installation . . . Plus Hi-Fi Picture & Sound Make The GR-53A A Best Buy!

• Built-in Service Center to adjust & maintain set • 26-tube, 8-diode circuit • Deluxe Standard-Kollsman VHF tuner with "memory" fine tuning • Transistor UHF tuner • High definition 70° 21" "rare-earth" color tube for brighter reds • Anti-glare bonded safety glass • 24,000 volt regulated picture power • Automatic color control for top color quality • Gated automatic gain control for steady "flutter-free" pictures • Tuners, I.F. and high voltage assemblies factory-built & aligned . . . just simple circuit boards to wire • Line Thermistor for longer tube life • Tubes alone list for over $260 • Transformer operated • Circuit breaker protection • Two hi-fi outputs plus tone control • One-piece metal chassis support for easy set-up & servicing • Mounts in wall, custom cabinet or either Heath cabinet • 1 year warranty on picture tube, 90 days on all other parts

Ends Costly Color TV Servicing . . . a built-in dot generator coupled with a convergence control center allows you to adjust the set yourself for the finest picture at all times. Simple-to-follow instructions and detailed color photos show you exactly what to look for and how to achieve it. No more color fringing or overlap. No more service calls everytime you move the set.

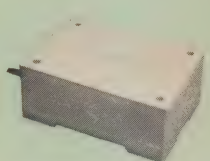
As Easy To Build As A Hi-Fi Amplifier . . . you simply wire 3 circuit boards, mount the parts, connect a color-coded wiring harness, and adjust the picture . . . all critical circuits are pre-assembled and aligned at the factory. You'll finish in about 25 hours. Result? 21" of the best color pictures on TV, plus true hi-fi sound. Install it in a wall, your own cabinet, or either Heath cabinets. The picture tube is warranted for a year, all other parts 90 days.

Kit GR-53A, all parts including chassis, tubes, mask, UHF & VHF tuners, mounting kit and specially shielded, extended range 6" x 9" speaker. 125 lbs. . . $38 dn., as low as $22 mo. **$375.00**

GR-53A SPECIFICATIONS—Picture size: 21" round, approx. 265 sq. in. **Deflection:** Magnetic 70°. **Focus:** Electro-static. **Convergence:** Magnetic. **Antenna input impedance:** 300 ohm balanced. **Picture IF carrier frequency:** 45.75 mc. **Sound IF carrier frequency:** 41.25 mc. **Color sub-carrier:** 42.17 mc. **Sound IF frequency:** 4.5 mc. **Tuning range:** VHF TV Channels 2-13, UHF 14-83. **Sound cathode follower:** Output impedance; 3K. Frequency response: ±1 db, 50-15,000 cps. Harmonic distortion: less than 1%. Output voltage: 2 V. **Audio output:** Output impedance: 8 ohms. Output power: 2 watts. Frequency response: ±2 db, 50-15,000 cps. Harmonic distortion: Less than 3%. **Power requirements:** 110 V to 130 V, 60 cycle AC, 300 watts. **Wall mounting space required:** 25" D x 25" H x 28" W.

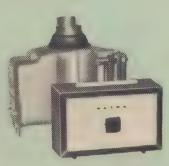
Economy Cabinet . . . Only $46.50!

Attractive, low cost. Constructed of walnut-finished wood and hardboard; tapered wood legs with brass finish ferrules and glides. GR-54A's speaker mounts behind grille cloth on left of cabinet. Cabinet size: 37¾" W x 33¼" H x 26¼" D.
GRA-53-6, 51 lbs. . . no money dn., $5 mo. **$46.50**



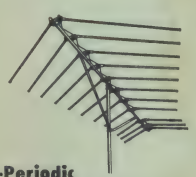
Performance-Proven Transistorized Blonder-Tongue FM/TV Booster (IT-4) For Fringe Areas

Dependable, trouble-free signal booster. Accepts up to four FM and TV sets simultaneously. 300 ohm input and output. Easy to install. 1⅝" x 2⅞" x 4".
GDP-331, 1 lb. . Only **$19.40**



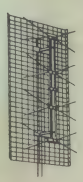
New! Alliance Tenna-Rotor . . . Save $16.50

New patented 5-wire bridge type circuit . . . unaffected by motor current, cable length or line voltage variations. Expanded meter scale. Rotates 360° either direction—instantly reversible. Magnetic brake. Lubricated for life. Moisture sealed, 115v AC, 60 cycle.
GDP-214, 11 lbs. **$23.45**



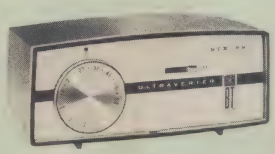
JFD Log-Periodic LPV-11 VHF TV Antenna!

Receives color, B & W TV (channels 2 thru 13), FM Stereo up to 125 miles away! Patented geometric concept for higher forward gain, sharper directivity, lower VSWR—down to 1.2 to 1, a front-to-back ratio of 35 db, Gold Bond Anodized finish. 11 V-elements!
GDP-124, 15 lbs. Mftrs. list $39.95 . . . . . Only **$23.45**



Taco 4-Bay Model 3044 TV Bow-Tie UHF Antenna

Popular open vee type with pivot mount for rigid locking to existing mast; heavy mesh screen reflector of galvanized 12 gauge steel with 1" x 1½" squares for max. stability and long life.
GDP-233, 5 lbs. Mftrs. list $8.75 . . . . . Net **$5.14**



Blonder-Tongue BTX-99A All-Transistor UHF Converter

Adds all UHF channels 14 to 83 to any TV. Ideal for prime signal areas. Performs well with indoor antenna in many areas. All-transistor circuit provides maximum signal power, and drift-free no-distortion performance. UL approved. Not a kit.
Model GDP-595, 2 lbs. **$19.45**

Your Best 25" Color TV Buy!

Only 25" Color TV You Can Install 3 Ways!

1. In a Wall
2. In Your Own Custom Cabinet
3. In Heath Factory-Built Cabinet

GR-25

$469.95

(less cabinet)

25" COLOR TV ON RESERVATION BASIS ONLY!

Demand continues to exceed our tube allocation. To reserve your GR-25 for future delivery, use separate order blank (center of flyer) mark "GR-25 Reservation Only", and return to us. We will promptly acknowledge your reservation and assign a priority number. We will contact you in advance of shipping date to confirm your reservation.

Space-Saving Rectangular Tube Provides More Picture Area . . . Has "Rare Earth" Phosphor For Livelier Colors . . . And You Can Converge It Anytime For Peak Performance!

• Hi-fi 90° rectangular 25" color tube with anti-glare safety glass and "rare earth" phosphor for better "reds," brighter pictures • 27-tube, 10-diode circuit • 25,000 volt regulated picture power • Automatic degaussing & mobile degaussing coil • Exclusive Heath "Magna-shield" covers entire tube for improved color purity • Built-in servicing facilities to adjust & maintain set • Extra B+ boost for improved picture definition • Dynamic pin-cushioning correction circuit eliminates picture edge distortion • Deluxe VHF turret tuner with "memory fine tuning" & long-life nickel silver contacts • 2-speed, transistor UHF tuner • Automatic color control circuit to reduce color fading • New 3-stage IF strip to reduce interference & improve reception • Gated automatic gain control for steady, flutter-free pictures • Circuit breaker protection • New vertical swing-out chassis for easier servicing & installation • 3-way installation . . . wall, custom cabinet or Heath factory-assembled cabinet • Assembles in just 25 hours with all critical circuits prewired & tested • 1-year warranty on picture tube, 90 days on all other parts

Features Exclusive Built-In Servicing, Automatic Degaussing And Other Color TV Advances For True Hi-Fi Picture & Sound—Compare!

No Cut-Off Corners, No Picture Loss . . . you see the complete picture with a full 295 sq. inches of viewing area . . . yet its rectangular shape takes less space in a cabinet or wall installation. A special "rare earth" phosphor insures brighter, more brilliant colors . . . a 25,000 volt regulated power supply assures a sharp, clear picture . . . and the anti-glare safety glass protects its "good-looking" face.

Picture Tube Is Demagnetized And "Cleaned" everytime you turn the set on from a cold start . . . thanks to the Automatic Degaussing Circuit. Also eliminates any manual degaussing when set is moved. A mobile degaussing coil is included for initial set-up and adjustment.

Exclusive Heath Magna-Shield . . . maintains color purity by shielding entire tube from external magnetic fields.

Higher Resolution, Improved Definition, And Brighter Pictures . . . thanks to the Extra B+ Boost which accelerates electron beams for a smaller spot size.

Straight Picture Edges With No Distortion . . . no more "waves" or contorted corners . . . two pincushion transformers with associated correction circuits assure you of straight vertical and horizontal lines.

2-Speed, Transistor UHF Tuner . . . has high vernier ratio for either fast channel selection of all UHF channels or fine tuning of individual stations.

Deluxe VHF Turret Tuner . . . with "memory" fine tuning . . . no need to readjust when you return to a channel. Long-life silver contacts assure positive switch action. Both channel indicators are lighted for easy reading.

3-Stage Video IF Strip . . . reduces interference and improves definition.

Vertical Swing-Out Chassis . . . hinged to make components more accessible (see illus. right).

Two VHF Antenna Inputs . . . Choose either 300 ohm balanced or 75 ohm coax input to reduce interference in metropolitan or CATV areas.

Tilt-Out, Front-Panel Convergence Controls . . . cabinet speaker grille tilts out to make dynamic convergence easier (see illust. right). No more reaching around the set, or mirrors to set up.

Main Control Panel . . . all tuning controls mount on universal panel for versatile custom installation . . . mounts above, below or to the right of the picture tube, wherever you prefer.

Hi-Fi Sound Outputs . . . accommodate special contained-field 6" x 9" speaker (included). Also has cathode follower output to drive your hi-fi system.

Color Fading Is Reduced . . . thanks to the Automatic Color Control Circuit . . . you always have the best picture.

Steady, Jitter-Free Pictures, Even In High Interference Areas . . . Gated Automatic Gain Control provides a balanced picture, even under fast-changing signal conditions, such as airplanes flying over your reception area. A color-killer circuit cuts off color signals when a black & white picture is being received.

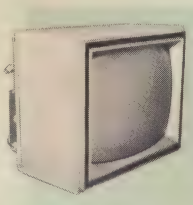
No Costly Service Calls For Picture Adjustments Or Simple Repairs . . . built-in servicing facilities include a dot generator to converge set any time. Full color illustrations and simple instructions show you exactly what to look for and how to achieve it.

3-Way Installation . . . install the GR-25 in a wall or custom cabinet . . . required dimensions: 20" D x 21" H x 26" W. Or choose the factory assembled, walnut finish Heath cabinet (above).

Kit GR-25, all parts including chassis, tubes, mask, UHF & VHF tuners, mounting kit and special extended-range 6" x 9" speaker, 131 lbs. . . . $47 dn., as low as $29 mo. **$469.95**

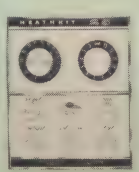
Assembled GRA-25-1, low-cost walnut cabinet, 35 lbs. . . . no money dn., $6 mo. **$59.95**

GR-25 SPECIFICATIONS—Picture size: 25", rectangular, approx. 295 sq. inches. **Deflection:** Magnetic 90°. **Focus:** Electrostatic. **Convergence:** Magnetic. **Antenna input impedance:** 300 ohm balanced, or 75 ohm unbalanced (VHF). **Picture IF carrier frequency:** 45.75 mc. **Sound IF carrier frequency:** 41.25 mc. **Color subcarrier:** 42.17 mc. **Video IF bandpass:** 3.58 mc. **Sound IF frequency:** 4.5 mc. **Tuning range:** VHF channels 2-13, UHF channels 14.82. **Sound cathode follower:** Output impedance; 3 K. Frequency response; ±1 db, 50-15,000 cps. Harmonic distortion, less than 1%. Output voltage; 2 v. **Audio output:** Output impedance, 8 ohms. Output power, 2 watts. Frequency response, ±2 db, 50-15,000 cps. Harmonic distortion, less than 3%. **Power requirements:** 110-130 v., 60 cycle AC, 330 watts. **Wall mounting:** 20" D x 21" H x 26" W inside. Control panel, assembly, 6½" W. x 7⅞" H. x 7" D.



Exclusive Heath Magna-Shield! Keeps out external magnetic fields and improves color purity by covering entire tube.

Vertical Swing-Out Chassis! Makes chassis more accessible for servicing and installation.



Universal Main Control Panel! Contains all main controls for more flexible custom installation . . . top, bottom or right side.

Convergence Control Panel! Front-panel mounted under "tilt-out" speaker grille section for easier, faster picture convergence.

Home Entertainers

GD-983
$799.00
(Including bench)

Enjoy Full Professional Organ Features Like Chimes, Rotating Leslie Speaker, and Full-Size 44-Note Keyboards With This Deluxe Heathkit®/Thomas "Coronado" BL-3!

• All genuine Thomas factory-fabricated components • 17 beautiful, rich organ voices • Two full-size 44-note keyboards • A built-in 2-speed Leslie plus 2-unit Main speaker system • 28 notes of melodious chimes . . . hundreds of chime variations • 13-note heel & toe pedalboard, range C thru C • Reverb for concert hall realism • Sustain on keyboards & pedals for a variety of special effects • Vibrato for warmth & beauty • New Stereo Chorus Control to create exciting "stereo" effects • Color-tone Attack & Repeat Percussion to produce additional voice effects • Treble Accent for added brilliance • Manual Balance to adjust relative volume of the two keyboards • Pedal Volume to adjust bass pedal loudness • Headset outlet to play without disturbing others • A full 5-year warranty on transistor tone generator boards . . . the heart of the organ • Luxurious full-bodied walnut finished cabinet . . . hand-crafted, hand-rubbed, completely assembled • Diode switching on upper keyboard . . . faithfully reproduces attack and decay of each musical tone with no annoying key "clicks"

Just Touch A Tab! And create any one of 17 beautiful organ voices . . . Saxophone 8′, French Horn 8′, Violin 8′, English Horn 8′, Oboe 8′, Flute 8′, Cello 8′, Bass Clarinet 16′, Trumpet 16′, Bourdon 16′, Flute D'amour 4′, Quint 5⅓′, and Diapason 16′ and 8′. And you'll soon learn various combinations to produce additional voices such as the hawaiian guitar, vibraharp, harpsichord, zither, caliope, bagpipes, etc. Plus different musical moods . . . classical, popular and religious. It's like having an orchestra at your fingertips. The 28 notes of chimes—worth $500 to $2000 as an extra on other organs—offer hundreds of variations. And with the 2-speed rotating Leslie speaker, you create the beauty of a full "theatre" organ, or a rich, random liturgical sound.

As **High Fidelity** Magazine put it: "*—this 'kit organ' is no toy or halfway-to-heaven gadget. It is rather a full-fledged, deep throated, authentic sounding organ that should interest the serious musician as well as the hobbyist and amateur.*"

No Extras, Nothing More To Buy! There are *no* speakers, amplifiers, or other "hidden necessities" to add as with other organ kits. Even includes a pre-tuned generator to tune it . . . no special "ear" needed. And what about kit assembly? **Popular Science** Magazine wrote: "*You don't have to be an expert or know anything about electronics to complete the project . . . Heath engineers have done an excellent job of programming the assembly so that you are never confused.*"

Kit GD-983, Organ & matching walnut bench, 245 lbs. . . .
$125 dn., as low as $27 mo. **$799.00**

Self-Teacher Recorded Lessons . . . Save $30!

Complete 48-lesson course on four 12″ LP records, and music book with many old-time favorites. Use with GD-983 or new GD-325 (pg. 6) organs.
GDA-232-2, recorded lessons, 5 lbs. . . . Mftrs. list $50. . . . . **$19.95**

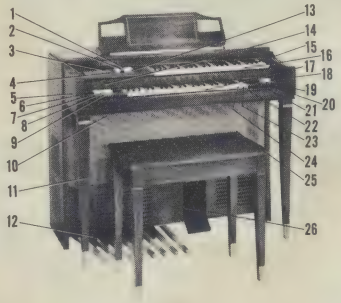
5-Year Warranty!

The transistorized plug-in tone generator boards, the heart of the organ, are warranted for five years. You buy with confidence when you buy a Heathkit version of the Thomas Organ. Replacement upon prepaid return of undamaged board to the Heath Company.

Like To Hear It Perform?

Send 50c for postage & handling, ask for 7″, 33⅓ rpm demonstration record no. GDA-983-2. You'll convince yourself!

1. Sustain Tab **2.** Reverb **3.** Swell Keyboard Voices **4.** On-Off And Pedal Volume **5.** Pedal Tab **6.** Pedal Sustain Tab **7.** Great Keyboard Voices **8.** Vibrato Tab **9.** Treble Accent Tab **10.** Headphone Jack **11.** Leslie Speaker **12.** Pedalboard **13.** Manual Balance **14.** Pilot Light **15.** Chimes **16.** Swell Keyboard **17.** Great Keyboard **18.** Leslie Rotor Switch **19.** Leslie-Main Speaker Tab **20.** Stereo Chorus **21.** Color-Tone Percussion Tabs **22.** Percussion Repeat Rate **23.** Percussion Delay Tabs **24.** Repeat Percussion Tab **25.** Main Speakers **26.** Expression Pedal



Thomas Organ Music Books

Contains complete organ music & registration charts for both GD-983 and GD-325 Heathkit/Thomas Organs.

HELLO DOLLY . . . all words and music from this famous musical.
GDP-165, 1 lb. **$2.00**
BERLIN'S BEST . . . "Always," "Say It Isn't So," 23 Berlin favorites.
GDP-135, 2 lbs. **$2.50**
AROUND THE WORLD IN WALTZTIME . . . 14 waltz favorites, "Fascination," "My Wild Irish Rose," etc. . . .
GDP-155, 1 lb. **$2.00**
LIGHT CLASSICS . . . "Serenade," "The Swan," 12 popular classics.
GDP-145, 1 lb. **$2.00**

For A Picture As Sharp As A Photograph, And Sound As Clear As An FM Tuner, Choose This Deluxe 23″ Black & White TV!

GR-22A
$169.00
(less cabinet, mask & speaker)

• UHF & VHF for all-channel (2-83) reception • 16 tubes, 5 diodes give 30 tube performance • 20,000 volt picture power • High definition 23″ 90° tube with anti-glare bonded safety glass • Spark-gap socket for picture tube protection • Deluxe Nuvistor VHF & transistor UHF tuners • Transformer power supply • Line circuit breaker, filament and B+ protection • Gated Automatic Gain Control & Noise Canceller for peak reception • Wide-band circuitry with 5 interference traps • DC restorer • Hi-Fi cathode follower output for hi-fi system • Hi-Fi sound-power output for speaker • Finest parts—tubes alone list over $135 • Easy circuit construction, wiring harness, and prebuilt tuner, IF strip and hi-voltage sections . . . finish in 12 hours.

Install In A Wall Or Cabinet! Choose the chassis & tubes, and the custom wall mask (GRA-22-5 right) for mounting in either a custom cabinet or wall. Or choose the handsome Heath walnut cabinet (Illust.) that blends with today's decor.

Kit GR-22A, chassis & tubes, 77 lbs. . . .
no money dn., $16 mo. **$169.00**

TV Wall & Cabinet Mask

Unfinished. Includes ¾″ mounting board. Cut & drilled. Required mounting space; 19″ H x 17¾″ D x 28⅛″ W.
GRA-22-5, TV wall mount, 13 lbs. **$23.50**
GR-62B, TV set with wall mount, 90 lbs. . . .
Save $7.50 . . . no money dn., $18 mo. **$185.00**

Deluxe TV Cabinet

(Illust.) Assembled. Walnut finish matches Heath Hi-Fi cabinets, pg. 28. Includes mask, mounting board, 6″ x 9″ speaker. Measures: 36″ W x 32⅜″ H x 20½″ D.
GRA-22-1, Walnut TV cabinet, 65 lbs. . . .
no money dn., $9 mo. **$84.95**
GR-52A, TV set & walnut cabinet, 142 lbs. . . .
Save $8.95, no money dn., $23 mo. **$245.00**

GR-22A SPECIFICATIONS—Picture size: 23″ overall diagonal, approximately 282 sq. in. **Deflection:** Magnetic, 90°. **Focus:** Electrostatic. **Antenna input impedance:** 300 ohm balanced. **Tuning range:** VHF TV Channels 2-13 & UHF Channels 14-83. **Picture IF carrier frequency:** 45.75 mc. **Sound IF carrier frequency:** 41.25 mc. **Sound IF:** 4.5 mc. **Video response:** to 3.2 mc. **Power requirements:** 105 V. to 125 V. 60 cycles AC, 210 watts.

How To Play Complete Songs In Minutes Instead of Months. Build The New Heathkit® / Thomas Color-Glo Organ!

Play Melody, Harmony, And Bass The First Time You Try It . . .
Even If You've Never Played An Instrument Before!

• Exclusive Thomas Color-Glo to start you playing instantly • All genuine Thomas factory-fabricated components • 10 true organ voices • Variable repeat percussion . . . produces banjo, mandolin, balalaika effects • 13-note heel and toe bass pedals • 2 overhanging 37-note keyboards, range C thru C • 50 watt EIA peak music power amplifier • 12″ speaker • Vibrato • Manual balance control • Transistorized plug-in tone generators, the heart of the organ, warranted for 5 years • Fully transistorized for better tone, longer life, trouble-free operation • Handcrafted, hand-rubbed walnut cabinet . . . completely assembled

GD-325
$349.95
(less bench)

No Long, Tedious Hours of Study Needed! You and every member of your family start playing many of your favorites instantly . . . with this new Color-Glo version of the Heathkit/Thomas "Artiste" ART-1 Organ. Special key lights show you the correct notes and chords.

Just Match Up The Colors And The Letters . . . It's Easy! Switch on the Color-Glo, and you're ready to play. Each key on the upper keyboard lights up with a letter for you to follow. You simply match the letters on the music with the letters on the keys, and automatically you play the melody. For harmony, there are 3 red keys, 3 black keys and 3 green keys on the lower keyboard. With your left hand, just press and hold the notes that match the background color in the Thomas Color-Glo music book (included).

But that's not all. To add the rich sound of the bass notes, press and hold the pedal that is marked with the same color as the harmony notes, changing to different colors as you change with your left hand. That's all there is to it . . . and you've done it all by yourself.

Touch the magic switch again, and the Color-Glo keys disappear, leaving a beautiful spinet organ console that will be the most admired piece of furniture in your living room. Your Color-Glo music teacher is your secret!

Keys Light Up To Show You Correct Notes & Chords. Thanks to exclusive Color-Glo, you and every member of your family can play melody, harmony and bass notes instantly. Just match up the colors with your left hand, the letters with your right hand . . . and you play complete songs . . . even if you've never played an organ before!

Great For Livening Up Parties! Create live music for dancing and song fests when friends gather for an evening . . . you're a one-man band. And there's no better way to relax. Teens will love the rhythm and bounce of its many musical effects, too. Ten true organ voices in all . . . trombone, reed, flute, oboe, cornet, violin, saxophone, horn, viola, and diapason. All at the simple touch of a tab. Also includes repeat percussion to create banjo and mandolin effects; 13-note heel and toe bass pedals; variable expression pedal to change the volume; two levels of vibrato intensity; variable bass pedal volume; manual balance control; 12″ speaker; and a 50-watt EIA peak music power amplifier.

Build It In About 50 Hours! Takes no special skills or knowledge. Includes simple step-by-step instructions . . . genuine Thomas factory fabricated parts . . . diagrammed, easy-to-wire circuit boards . . . factory assembled hand-rubbed walnut cabinet (measures 41¼″ H x 39¾″ W x 21½″ D) that's ready for the sub-assemblies as you complete them. You even tune the organ with the pre-tuned tone generator . . . no "special" ear needed. Then relax and enjoy your newly discovered talent as you take the "light approach" to music . . . with instant-play Color Glo!

Kit GD-325, Organ, 153 lbs. . . $35 dn., as low as $21 mo. **$349.95**
GDA-232-1, matching walnut bench, 18 lbs. . . no money dn., $5 mo **$24.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Hear It Perform!
Send 50c for postage & handling, and ask for model GDA-232-5, demonstration record (7″, 33⅓ rpm).

Special Note To GD-232 (A & B) Organ Owners!

As much as we'd like to, it is **not** possible to offer a Color-Glo conversion kit because of extensive differences in cabinet structure between the GD-232 models and the new GD-325.

Additional Thomas Color-Glo Music Books

Color-Glo Music Book No. 2 . . . contains words, music and "color-coded" charts for 56 favorites . . . "Beautiful Brown Eyes," "Camptown Races," "Home On The Range," "Joy To The World," "Goodnight Ladies."
GDP-355, 1 lb. **$2.50**

Color-Glo Music Book No. 3 . . . contains words, music and "color-coded" charts for 60 favorites . . . "Away In A Manger," "Bill Bailey," "Glow Worm," "How Dry I Am," "My Darling Clementine," etc.
GDP-365, 1 lb. **$2.50**

Color-Glo Organ Course, Vol. I . . . contains sections on using Color-Glo, legato, stop tabs, manual balance control, percussion, plus 22 song favorites.
GDP-375, 1 lb. **$2.50**

Color-Glo Supplementary Song Book . . . with words, music, "color-coded" charts for 55 songs . . . "Billy Boy," "God Be With You Till We Meet Again," "Old Soldiers Never Die," "Wait For The Wagon," etc.
GDP-385, 1 lb. **$2.50**

Deluxe "Go-Anywhere" Shortwave Portables!

HEATHKIT®

Get The Finest In Portable Listening . . . Choose This 10-Band Transistor AM/FM/Shortwave Radio!

• 10 bands tune Longwave, Standard Broadcast, FM and 2 mc.-22.5 mc. Shortwave Bands • 16 transistors, 6 diodes and 44 factory assembled and pretuned circuits • Two separate AM & FM tuners and IF strips • Two built-in antennas • Battery saver switch cuts current drain up to 35% • Rotating tuning dial • Dial light • Four simple controls for tuning, volume, tone, AFC and band switching • 4" x 6" PM speaker • Earphone & built-in jack • Optional converter/charger available • Time zone map & "listener's guide"

GR-43
$159.95

An Entertaining Companion Wherever You Go. That's the new GR-43. Keeps you informed of the latest happenings on its 550-1600 kc AM band with a tuning sharpness that brings in stations you've never heard before. Its 88-108 mc FM band offers you the quiet beauty of truly fidelity music, thanks to the same tuner and IF strip as used in deluxe Heathkit FM stereo components. For drama and unique listening, its 7 shortwave bands cover the 2-22.5 mc spectrum to bring you thousands of foreign broadcasts, ships at sea, amateur radio operators, weather stations, etc.

16 Transistors, 6 Diodes, 44 Factory-Built & Aligned RF Circuits . . . your assurance of instant, heat-free operation; superior performance; and easy 10-hour assembly. Two separate AM and FM tuners are factory assembled, ready to mount into place . . . eliminates the need for alignment, insures peak performance, and speeds assembly.

Two Built-In Antennas . . . a large ferrite rod neatly housed in the easy-carry handle for AM and longwave. And a 5' telescoping whip that tilts for best FM and shortwave reception. Also has connectors for external AM and FM antennas.

Versatile Controls Offer Added Convenience! Like the Battery-Saver switch that reduces battery drain up to 35% for normal indoor listening, or provides full power for extra strong reception outdoors. A 10-position selector directly drives the rotating turret dial . . . permits easy viewing of any band (a logging scale aids in relocating unknown frequencies). There's a Dial Light switch for nighttime use; Automatic Frequency Control with on-off switch for drift-free FM; an 8½ revolution Tuning knob easily separates stations; a combination on-off switch and tone control for listening as you like it.

Big 4" X 6" PM Speaker, specially designed to match cabinet acoustics, provides "big-set" sound. Also includes an earphone that plugs into a built-in jack for private listening.

Inexpensive, Flashlight Battery Power. 6 "D" batteries power the radio, and 1 "C" battery operates the dial light (batteries not included). Also operates on 117v. AC as it "float" charges its batteries with an optional converter/charger (see opposite).

Deluxe Styling Matches Deluxe Performance. Jet black extruded aluminum front and back panels contrast beautifully with the chrome-plated, die-cast end pieces. Both panels are hinged . . . open and close easily thanks to special magnetic edges . . . no cumbersome latches or snaps. The front panel can be removed to take less space when used at home. Inside the front panel, you'll find a "listener's guide" with frequencies of worldwide shortwave and U.S. FM stations . . . travels snugly in its own special slot. In addition, there's a special map for easy conversion of world time zones.

Kit GR-43, 19 lbs. . . no money dn., $15 mo. **$159.95**
Model GRA-43-1, Converter/Charger for 117 v. AC, 1 lb. **$6.95**

GR-43 SPECIFICATIONS—AM SECTION: Tuning range: Long wave—150-400 kc; Broadcast—550-1600 kc; 2-4 MC—2-4 mc; 4-9 MC—4-9 mc; 31 M—9.2-10.2 mc; 25 M—11.2-12.4 mc; 19 M—14.5-16.1 mc; 16 M—16.8-18.8 mc; 13 M—20.2-22.5 mc. **Sensitivity:** at External Antenna Input for a 10 db signal-plus-noise to noise ratio. Long Wave—12 uv; Broadcast—10 uv; 2-4 MC—5 uv; 4-9 MC—3 uv; 31 M—3 uv; 25 M—2 uv; 19 M—2 uv; 16 M—2 uv; 13 M—2 uv. **Intermediate frequency (IF):** 455 kc. **FM SECTION:** Tuning range: 88-108 mc. **Sensitivity:** 1½ uv for 20 db of quieting; 2 uv for 30 db of quieting; 3 uv for 40 db of quieting. **Intermediate frequency (IF):** 10.7 mc. **GENERAL: Audio output:** Normal: 500 mw; Battery Saver: 160 mv. **Speaker:** 4" x 6" oval; permanent magnet; 3.2 ohm voice coil impedance. **Batteries:** 6—size D cells; 1—size C cell. **Dimensions:** 13½" W x 5⅛" D x 10⅜" H, including handle.

Optional Charger/Converter . . . to operate on 117 v. AC. Plugs into built-in jack to "float-charge" batteries while you enjoy good listening without battery drain. Priced at only $6.95.

Separate AM & FM Tuners —44 R.F. Circuits . . . all factory assembled and aligned to assure finest performance and fast, easy assembly. Just mount entire section in place, and wire 3 small circuit boards.

Convenient! Both front & back panels are hinged . . . close and open easily thanks to special magnetic edges. In addition, the front cover can be completely removed to take less space when in use at home.

1966 World Radio TV Handbook

World recognized authority for information on international radio, TV and tele-communications. Contains a list of all AM, FM, TV and Shortwave broadcasting stations . . . includes call signs, frequencies, transmitter power, address for QSL cards, program details, broadcast times, and hundreds of other items important to the shortwave listener. 300 pages.
GDP-315, 2 lb. **$4.95**

Enjoy The Good Companionship Of A "Mohican" Portable SWL Receiver!

• Powerful 10 transistor, 6-diode circuit • Tunes 550 kc to 32 mc in five bands • Fixed-aligned ceramic IF "transfilters" for best selectivity • Completely self-contained for portability, yet can operate on 117 V. AC with XP-2 accessory below

Handsome, Compact, Ready To Go Anywhere! In addition to the features above, the GC-1A has Zener diode voltage regulation . . . smooth, easy flywheel tuning . . . built-in 4" x 6" speaker . . . panel tuning meter for precision tuning . . . 50" telescopic whip antenna . . . headphone jack for private listening . . . large, slide-rule dial for accurate station selection. Less batteries. Requires RF generator for final alignment.

Kit GC-1A, 18 lbs. . . no money dn., $9 mo. **$89.50**
Kit XP-2, 117 v. AC plug-in power supply, 2 lbs. **$9.95**

GC-1A SPECIFICATIONS—IF Frequency: 455 kc. **Frequency coverage:** 550 kc to 32 mc in 5 bands with calibrated bandspread scales (oscillator tuning) for 80, 40, 20, 15 and 10 meter amateur bands and 11 meter citizens bands. **Selectivity:** 3 kc wide at 6 db down. **Sensitivity:** 10 uv broadcast band, 2 uv shortwave bands for 10 db signal-to-noise ratio. **Output:** 400 milliwatts max. **Battery life:** Up to 400 hours normal intermittent service using 8 standard size "C" cells. **Dimensions:** 6⅞" H x 12" W x 10" D.

Low Cost World Cruise . . . On Shortwave Radio!

*Offer expires May 31, 1966.

GR-54 **$84.95**

FREE . . . Accessories For Complete Shortwave System . . . $12 Value!

Headphones!

SWL Station Guide!

Shortwave Antenna!

• 5 bands . . . 3 shortwave bands cover 2 mc to 30 mc, plus 550 kc to 1550 kc AM broadcast band, & 180 kc to 420 kc aeronautical & radio navigation band • Tuned RF stage for greater sensitivity • Half lattice crystal filter for sharp selectivity • Separate product detector for efficient SSB & CW reception • Switchable upper or lower sideband mode position • Built-in relative signal strength indicator • Electrical band-spread tuning • 6 tube—6 diode superhet circuit plus 2 silicon diode rectifiers • Built-in code practice monitor plus code key jack • Automatic noise limiter, automatic volume control & antenna trimmer control • "Velvet-touch" 20 revolution main tuning • Built-in 4" x 6" PM speaker • Built-in AM antenna plus external antenna terminals • Standard jack accepts headphones or external speaker • Safe transformer-operated power supply

GR-54 SPECIFICATIONS— Frequency Coverage: Band A 180 kc to 420 kc; Band B 550 kc to 1550 kc; Band C 2 mc to 5 mc; Band D 5 mc to 12.5 mc; Band E 12.5 mc to 30 mc. **Sensitivity:** AM: Band A 1.6 uv; Band B 8 uv; Band C 1 uv; Band D 1.2 uv; Band E 6 uv. SSB/CW: Band A 0.7 uv; Band C 0.4 uv; Band D 0.5 uv; Band E 4 uv. Signal Level for 10 db, signal plus noise to noise ratio. **Selectivity:** Half lattice crystal filter; 3 kc minimum at —6 db; 7.5 kc maximum at —20 db. **Intermediate frequency:** 1682 kc. **Antenna Input impedance:** 50 ohms nominal—phono connector. **Power requirements:** 120 volts 50/60 cps AC, 45 watts. **Controls:** Bandspread, AF Gain/off-on switch; RF Gain; Ant. trim; Mode switch; Band switch; Main tuning; AVC switch; ANL switch; OPR switch; Meter adjust. **Audio output impedance:** 8 ohms nominal. **Meter:** Indicates relative signal strength. **Speaker:** Built-in 4" x 6" permanent magnet. **Standard jack:** Accepts 8 ohm ext. speaker, or headphones (50 ohm to 10 K ohm). **Dimensions:** 14⅝" W x 6-5/16" H x 10-15/16" D.

FREE Shortwave Headphones, SWL Book, Antenna . . . When You Buy This Heathkit GR-54 Now!*

Free . . . All Accessories For A Complete Shortwave System! A Superex Headphone (opposite) for "DX-ing" and private listening, 1966 World Radio TV Handbook that lists all AM, FM, TV and Shortwave stations (see pg. 7), plus a 75' shortwave antenna . . . a $12 value . . . are yours free when you order the GR-54 before May 31!

Deluxe Features For Superb Shortwave Reception. Like the half-lattice crystal filter for razor sharp selectivity; tuned RF stage; a separate diode detector for efficient SSB & CW listening, plus a diode AM detector; a switchable BFO control for upper and lower sideband tuning . . . eliminates "trial & error" SSB tuning.

For Added Savings, You Build & Align The "Front-End" Tuner . . . with or *without* instruments . . . and get factory-assembled results. Thanks to a unique bandswitch assembly, you align the coils by using the signal strength meter for adjustment readings.

Kit GR-54, 24 lbs. . . no money dn., $9 mo. **$84.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

New! Superex Shortwave Headset Free With Heathkit GR-54*

For "DX-ing" and Private Listening Convenience! Ideal for use with all Heathkit Shortwave (except GR-43) and amateur communication receivers. Provides loud volume where other phones whisper. Features high sensitivity, single lead convenience, comfortable vinyl-covered headband (1⅛" wide), dual coils, Alnico V magnets, and 2000 ohm impedance. Feather-weight. Not a kit.

GD-396, 1 lb **$5.58**

Explore The Exciting World Of Shortwave With This Low Cost Receiver!

• Covers 550 kc to 30 mc—includes broadcast plus 3 shortwave bands • 4-tube superhet circuit plus 2 silicon rectifiers • Built-in 5" PM round speaker • Illuminated 7" slide-rule dial with logging scale • Lighted band-spread tuning dial • Relative signal strength indicator • Variable BFO control • Built-in AM rod antenna • Simple circuit board construction • Headphone jack • Charcoal gray metal cabinet, black panel with green & white markings

Travel To Far-Away Places With Just A Twirl Of A Dial! Intrigue runs high as you tune live broadcasts from the Congo, Ecuador, Japan, Holland . . . hundreds of foreign countries. Your curiosity heightens as you pick up ham operators, ship-to-shore radio, Voice of America, Radio Moscow, etc. Then come home again, and get local news, weather and sports on the popular AM band!

Advanced Features Insure Solid Reception, Easy Operation! A high voltage, transformer-operated power supply insures safety and peak efficiency; a BFO control "unscrambles" code & SSB; a 16-revolution tuning knob makes dialing smooth & effortless; an electrical bandspread maximizes station separation; and there's even a headphone jack for private listening. The back panel has terminals for an external antenna, a Q-multiplier input (see GD-125 opposite) and a noise limiter on/off switch. Assembly takes 8 to 10 hours.

Kit GR-64, 15 lbs. . . No money down, $5 mo. **$37.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Shortwave Antenna Kit GRA-72, 2 lbs. **$1.45**

GR-64 SPECIFICATIONS—Frequency range: 550 kc to 30 mc in four bands. **Controls:** General coverage tuning, Bandspread tuning, Bandswitch, Noise Limiter—ON/OFF, Phone-Standby-CW switch, BFO control, Audio Gain, AC-ON/OFF, Headphone jack, Q-multiplier input. **Power requirements:** 105-125 V 50/60 cycles AC, 30 watts. **Dimensions:** 13½" W x 6" H x 9" D.

GR-64 **$37.95**

NEW Heathkit "Q" Multiplier!

New Compact "Low-Boy" Styling! Attractive charcoal cabinet with gray front panel . . . matches GR-64 SWL receiver (above). Ideal for use with GR-64 or similar receivers with IF circuits from 450 to 460 kc. Creates extra-sharp selectivity through an efficient "Q" of 4000, and provides a notch for adjacent signal attenuation. Includes built-in power supply.

Kit GD-125, 3 lbs. **$14.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

GD-125 **$14.95**

Ideal Kit For Youngsters & "Beginners" . . . Our Lowest Cost Shortwave Radio!

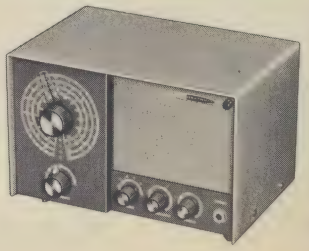
• Covers 140 kc to 18 mc in 4 bands • Transformer operated power supply • Built-in speaker & headphone jack, metal cabinet • Easy to build—from parts to listening in 6 hours

Brings You International Stations . . . amateur radio bands . . . marine & aircraft broadcasts . . . government stations . . . and entertaining AM listening. Simple 3-tube regenerative circuit assembles easily in 6 hours . . . an ideal project for the beginner in radio and electronics! Features provisions for long & short antennas, "shock-free" transformer-operated power supply, headphone jack for private listening, built-in speaker, front-panel controls and green & beige metal cabinet.

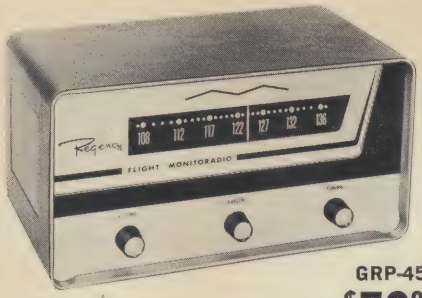
Kit GR-81, 12 lbs. **$23.50**

GR-81 SPECIFICATIONS—Frequency coverage: 140 kc to 18 mc on four bands. **Tube complement:** 12AT7 Detector/1st Audio, 50C5 Audio Output, 35W4 Rectifier. **Power requirements:** 105-125 V 50/60 cycle AC only, 30 watts. Fused. **Controls:** Main tuning (calibrated), Bandspread, Bandswitch, Regeneration, on/off volume, phone jack. **Dimensions:** 10" W x 7" H x 7" D.

GR-81 **$23.50**



For An Exciting New Listening Experience, Choose A Regency VHF FM Monitoradio!



GRP-45 **$79.95**

Regency Aircraft Monitoradio

• Covers 108 to 136 mc • 3-gang condenser with nuvistor RF amplifier for 1 uv sensitivity • Adjustable squelch for full quieting • Built-in 5" speaker • Fully tuned RF stage for better image rejection • Illuminated slide-rule dial • External speaker provision • Power transformer • Vinyl laminated leather-grained scratch & marproof metal cabinet • Not a kit

FOR THE SERIOUS AVIATION ENTHUSIAST! Hear aircraft, control towers, approach control, radar approach, ILS, Unicom, Omni-range . . . the whole exciting panorama of America in flight. Outperforms "commercial grade" aircraft receivers. Provides increased sensitivity . . . a stronger, clearer signal . . . improved signal-to-noise ratio . . . reduced oscillator radiation. Measures 12" W x 6¼" H x 6⅜" D.

Model GRP-45, 14 lbs., No money down, $8 mo. **$79.95**

GRP-45 SPECIFICATIONS: Frequency: 108-136 mc. **Sensitivity:** 1 uv for 10 db S + N/N at 30% modulation. **Squelch range:** Adjustable from .5 uv to 100 uv. **Power output:** 1 watt.

GDP-205 GDP-215

GRP-55 **$79.95**

Regency Model MR-33B

• Covers 30 to 50 mc • Full tuned RF stage insures better image rejection • Built-in 5" speaker • 3-gang condenser • 7 tube circuit with rectifier • Built-in adjustable squelch for complete quieting • Provision for external speaker or headphones • Illuminated slide-rule dial for quick, easy station tuning • Power transformer • UL approved • Not a kit

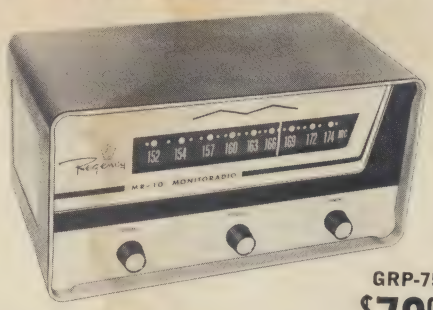
WIDEN YOUR LISTENING HORIZONS! With this quality engineered special-purpose radio, you keep posted on the latest happenings on power utility, industrial, highway maintenance, forestry, private mobile telephone and radio paging frequencies as well as fire and police calls. Completely assembled. Measures 7⅞" x 11¼" x 6½".

Model GRP-55, 13 lbs., No money down, $8 mo. **$79.95**

GRP-55 SPECIFICATIONS: Frequency: 30-50 mc. **Sensitivity:** 4.0 uv or better for 20 db quieting. **Squelch:** 2.0 uv (adjustable). **Power output:** 0.8 watt @ 10% distortion.

HY-GAIN ¼ Wavelength Unity Gain Ground Plane Antenna. Ideal for GRP-45 & GRP-75 monitoradio

GDP-205, 3 lbs.
(express or motor freight only) **$5.40**



GRP-75 **$79.95**

Regency Model MR-10B

• Covers 152-174 mc • 7 tube circuit with rectifier • Fully tuned RF stage for better image rejection • 3-gang condenser • Built-in 5" speaker • Reliable built-in, all-electronic squelch • Provision for external speaker or headphones • Illuminated slide-rule dial for nighttime operation • Power transformer • Listed by Underwriters' Laboratories • Not a kit

A NEW WORLD OF INTRIGUING LISTENING! Just look at the exciting array of broadcasts you can hear with this superb receiver . . . civil defense, police and fire department calls, U.S. Weather Bureau broadcasts, railroads, taxis, private mobile telephone, power utilities, forestry and other emergency services! Comes completely assembled. Just plug into any AC receptacle to enjoy its informative and entertaining coverage. 7⅞" x 11¼" x 6½".

Model GRP-75, 14 lbs., No money down, $8 mo. **$79.95**

GRP-75 SPECIFICATIONS: Frequency: 152-174 mc. **Sensitivity:** 4.0 uv or better for 20 db quieting. **Squelch:** 2.2 uv (adjustable). **Power output:** 0.8 watt @ 10% distortion.

HY-GAIN ¼ Wavelength Unity Gain Ground Plane Antenna. Omni-directional. Ideal for GRP-55.

GDP-215, 6 lbs.
(express or motor freight only) **$12.95**

Ideal For Service Stations Or Car Enthusiasts . . . Low Cost Auto Ignition Analyzer

•Spots ignition troubles—shows results of corrective action • Just flip a switch to select any of 4 different patterns without switching leads • Expand any view horizontally or vertically for a "closer look" • Easy to use—detailed instruction manuals provided for assembly and operation • Use on any internal combustion engine with conventional non-transistor ignition system

Helps Keep Your Car Running Smoothly! Shows shorted plugs, bad points, defective wiring, worn distributor parts, incorrect dwell time, etc. Complete manuals show what to look for on 4½" screen, how to isolate trouble. May be used with external DC to AC inverter. Corrosion-resistant aluminum case. Compact . . . 8" H x 9½" W x 16" D.

Kit IO-20, 17 lbs. . . . no money dn., $9 mo. **$89.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

IO-20 SPECIFICATIONS—RPM Range: 400-5000 rpm. **Displays:** Secondary, Primary, Parade, Super-imposed. **Screen size:** 4½" diameter. **Dwell measurement:** 4, 6 & 8 cylinder calibration on face plate. **Pattern height:** Secondary circuit, approx. 1". Primary circuit, 6 volt system ¾", 12 volt system 1". **Vertical expand ratio:** 2 to 1. **Horizontal expand ratio:** 10 to 1. **Cable length:** 12' pick-up clamp, 2' ground, primary and secondary clips. **Power requirements:** 105-125 V, 50/60 cycles AC, 30 watts.

Timing Light Kit . . . Accessory To IO-20 Ignition Analyzer!

• Easy to use—just plug into IO-20 Analyzer • Produces intense white light • Hard rubber case—10' connecting cable • Speed range 0-1250 flashes per minute (0-2500 rpm for 4-cycle engines) • Measures 6"H x 7½" L x 2" W

Kit ID-11, 3 lbs. **$14.95**

Famous Gilbert-Davis Basic Tester Set For Car Engine Tune Up And Repair!

Ideal For Do-It-Yourselfers & Professionals! Includes a Model 34 Remote Starter Switch with push button and extra long, neoprene insulated lead wires . . . Model 35 Compression Tester that reads 0-300 lbs. on 2½" dial—features short stem with 15° offset to reach back cylinders . . . Model 36 Vacuum/Fuel Pump Tester with 2½" 3-color dial—calibrated 0-30" for vacuum and 0-7 lbs. pressure . . . Model 37 Engine Timing Light with molded plastic case, long leads, and rubber covered connectors. Not a kit.

Model GFP-83, 4 lbs. **$11.95**

Order 2 Or More 5-Watt CB Transceivers & Save 5%

Deluxe 5-Channel "Fixed Or Mobile" CB Transceiver—MW-34

• Front panel crystal socket–allows quick, convenient changing of one transmit crystal without removing cabinet • Spotting switch–generates a signal to tune receiver to exact frequency of changeable transmit. channel • TVI filter–minimizes interference with TV sets • Calibrated "S" meter • 5 crystal-controlled transmit & receive channels • 3-way power supply–6 or 12 v. DC, 117 v. AC • Superhet receiver with RF stage for high performance • Styled in handsome Heathkit marine motif • Easy to build • Complements Heath marine radio-telephones as alternative means of communication in many boating areas

IDEAL FOR BOAT, CAR, & HOME! With its compact size, 3-way power supply (117 VAC, 6 or 12 VDC) and mounting bracket, the MW-34 installs virtually anywhere you wish to set up CB communications.

SIMPLE TO BUILD! New 2-color, step-by-step instructions speed assembly. Includes PTT mike, AC & DC power cords, crystals for 1 channel (specify), FCC license pack. Use must comply with Part 95 FCC regulations.

Kit MW-34, 18 lbs...no money dn., $9 mo.....**$84.95**

MW-34 GENERAL DESCRIPTION: RECEIVER: 5-tube superheterodyne circuit with RF stage, squelch & automatic noise limiter. **Variable receiver tuning:** Any one of 23 Citizen's Band channels selected by front panel variable tuning dial (frequencies 26.965 to 27.255 mc). **Crystal-controlled receiver tuning:** Any five of 23 Citizen's Band channels determined by particular crystals installed in unit. **Sensitivity:** ½ uv for 10 db signal-to-noise ratio. **Selectivity:** 5 kc @ 6 db down from peak response. **Input impedance:** 50 to 70 ohm. **TRANSMITTER SECTION: Nominal power input to final RF amplifier:** 5 watts. **Output impedance:** 50 to 70 ohm. **GENERAL SPECIFICATIONS—Meter:** For receiving, S9 scale indication corresponds to approximately 30 microvolts signal input. **Power requirements:** 105-125 volts, 50/60 cps, AC 72 watts. 12 volts DC, 4.5 amperes; 6 volts DC, amperes. **Dimensions: Overall;** 4⅝" H x 8⅜" W x 11" D.

GW-42
$99.95

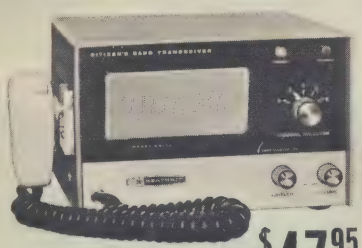
• 5 crystal-controlled transmit & receive channels • Built-in 4 tone selective call circuitry • All-channel receiver tuning • Tuning meter • Built-in 3-way power supply • Adjustable squelch • Switchable automatic noise limiter • Easy to build

Deluxe 5-Channel "Master Station" Fixed Or Mobile CB Transceiver

ATTRACTIVE STYLING, YET RUGGED & READY TO GO ANYWHERE! Car, truck, barn, office, or home . . . anywhere you need complete command of a 2-way CB radio setup. Shorten the time and distance required for efficient farm, business, or personal communications. Includes PTT microphone, AC & DC power cables, FCC license pack, and crystals for 1 channel (specify). Use must comply with Part 95 FCC regulations.

Kit GW-42, 23 lbs...no money dn., $10 mo.....**$99.95**

GW-42 GENERAL DESCRIPTION—RECEIVER SECTION: 6 tube superheterodyne circuit with RF amplifier, squelch, noise limiter. **Intermediate frequency:** 455 kilocycles. **Sensitivity:** ½ microvolt or less for a 10 db signal to noise ratio. **Selectivity:** 40 db attenuation of adjacent channel. **TRANSMITTER SECTION: Nominal power input to final RF amplifier:** 5 watts. **Frequency control:** 3rd overtone crystal as selected by 5-position switch. **Modulation:** AM plate modulation, automatically limited to less than 100%. **Output impedance:** 50-70 ohm. **TONE SQUELCH SECTION: Frequency control:** Resonant reed relay; with reeds used for generation of calling tone and frequency selection during monitoring. **Power requirements:** AC at 105-125 volts, 60 cycles, 70 watts; 6 VDC at 9 amps; 12 VDC at 5 amps. **Dimensions:** 5⅞" H x 17½" W 10½" D.



GW-22A $47.95

Heathkit 5-Channel CB Transceiver

• 5-crystal-controlled transmit & receive channels • Superhet receiver with RF stage • Built-in squelch & automatic noise limiter • Push-to-talk microphone • Easy to build

FOR THE ULTIMATE IN VERSATILITY AT LOWEST COST . . . all models include full 5 channel capability, PTT mike, power cable, & crystals for 1 channel (specify). Use must comply with Part 95 FCC regulations.

Kit GW-22A (117 v. AC), 13 lbs...No money down, $5 mo.....**$47.95**
Kit GW-22D (6 or 12 v. DC), 13 lbs...No money down, $5 mo.....**$49.95**
Kit GW-32A with Selective Call (117 v. AC), 14 lbs., No money down, $7 mo.....**$69.95**
Kit GW-32D with Selective Call (6 or 12 v. DC), 14 lbs., No money down, $8 mo.....**$74.95**

GW-12A $34.95

Low-Cost "One-Channel" CB Transceiver

• Crystal-controlled transmit & receive channel • Built-in squelch & automatic noise limiter • Superheterodyne receiver • Ideal for fixed or mobile use • Clean, open circuit layout for quick, easy assembly • Includes cabinet, PTT mike, & crystals (1 channel–specify) • Use must comply with Part 95 FCC regulations

Kit GW-12A (AC only), 10 lbs...No money down, $5 mo.....**$34.95**
Kit GW-12D (AC & DC), 13 lbs...No money down, $5 mo.....**$39.95**

Dollar-Saving CB Accessories!

Ⓐ **Hy-Gain Roof Top Mobile CB Antenna.** The famous Shorty "Roof-Topper". Overall height 22". **GDP-245,** 2 lbs.....**$15.50**

Ⓑ **Hy-Gain AM/CB Mobile CB Antenna.** Telescoping "Duo-Topper". 28" min.–50" extended. Includes coax, coax connector, rf coupler, & AM radio plug . . . all preassembled. **GDP-255,** 2 lbs.....**$14.95**

Ⓒ **Hy-Gain Trunk Mount Mobile CB Antenna.** "Jiffy-Topper". Overall height 50". Includes 16' of coax cable plus connector. **GDP-265,** 2 lbs.....**$13.95**

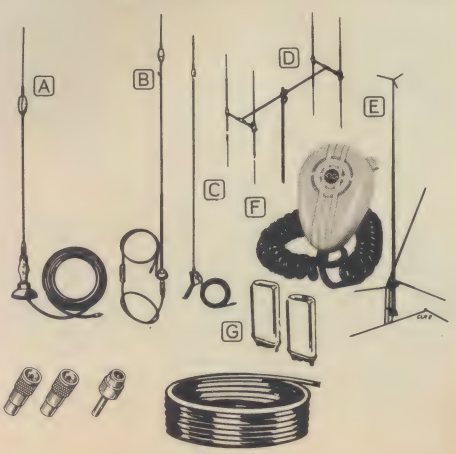
Ⓓ **Hy-Gain Dual Beam CB Base Antenna.** Duo-Beam 4 model 114DB. 42 watts effective radiated power from a 5-watt rig with this roof-top vertical-element antenna! **GDP-275,** 16 lbs...no money dn., $5 mo...**$39.95**

Ⓔ **Colinear CB Base Antenna.** Ground plane type antenna. Overall height of radiator . . . 19'10"–length of radials . . . 9'. Provides the most efficient omni-directional base station antenna. **GDP-285,** 8 lbs...no money dn., $5 mo...**$29.95**

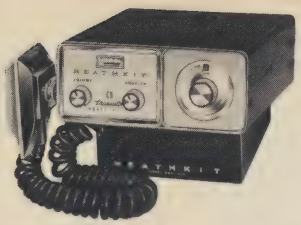
Ⓕ **PTT Microphone.** Push-to-talk mike with tailored audio response. Complete with cable. Less plug. **GH-12,** 2 lbs.....**$6.95**

Ⓖ **Extra CB Transmit & Receive Crystals,** 1 lb., only **$1.99** each with order of any Heathkit CB transceivers . . . reg. $2.95 each. (Specify base/mobile or hand held transceiver.)

Coax Cables. Ideal for use with any Citizen's Band or Amateur radio communications system. Also ideal for GDP-285 and GDP-275 CB Base Station Antennas
Each kit contains 2 coax plugs & 1 phono plus instructions.
Kit GD-295, 50 ft., 2 lbs.....**$3.75**
Kit GD-305, 100 ft., 4 lbs.....**$5.50**



All-Transistor 23-Channel 5-Watt CB



OPERATES "FIXED" . . . with accessory AC power supply . . . GWA-14-1. AC power switching is accomplished through the ON-OFF-VOLUME control on the "Transceiver" front panel. The GWA-14-1 is a desk-top base for the "Transceiver" and provides all necessary power . . . requires only one plug-in connection.
Kit GWA-14-1, AC Power Supply, 5 lbs. **$14.95**

CRYSTALS ONLY $1.99 EACH WITH TRANSCEIVER ORDER! If you need more than 1 channel, order the extra crystals along with your transceiver for only $1.99 each . . . a 96c savings. Regularly $2.95 each when ordered separately.

Kit GW-14
$89.95
Assembled GWW-14
$124.95

COMPLETE 23-CHANNEL CB CRYSTAL PACKAGE . . . . . $79.95!
A regular $135.70 value! Includes transmit & receive crystals for all CB channels for complete GW-14 operating capability . . . a total of 46 crystals. For maximum versatility, this package is your best dollar buy! **GWA-14-2,** 1 lb. no money dn., $8 mo. **$79.95**

Even Factory Assembled With All Crystals Installed, This New Heathkit GW-14 Makes All Other Transistor Rigs Overpriced!

• 14 transistor, 6 diode circuitry • Provision for 23 crystal-controlled transmit & receive channels • Full 5 watt performance • Only 2⅞" H x 7" W x 10½" D . . . ideal for car, boat, any mobile installation • Front panel "S" meter • Adjustable squelch control • Automatic noise limiter • Built-in PM speaker • ½ uv sensitivity for 10 db signal plus noise to noise ratio • Circuit board construction • Gimbal mounting bracket • Attractive Turner Ceramic PTT Mike • Die-cast, chrome-plated front panel with rust-resistant aluminum charcoal gray cabinet.

ALL-CHANNEL, ALL-TRANSISTOR! Just flip the channel selector to any desired channel and you're ready for instant 2-way communications. The efficient twin "pi" network output assures a *minimum* of 3 watts RF output from the 5-watt circuit . . . assures you of dependable all-channel communications over maximum distance. The GW-14 is all transistorized . . . no component deterioration to let you down, as with tube types. It runs cool, and collected . . . draws only 0.75 amps during "transmit", only 0.12 amps on "receive". Your GW-14 will give you new standards in CB performance.

EASY TO BUILD . . . EASY TO OPERATE. All parts mount on a single circuit board, and assembly is completed in a few evenings. Tune-up is easy, requiring only another CB unit. Operation is push-to-talk. The improved adjustable squelch control eliminates all speaker hiss during standby. Illuminated channel selector and "S" meter enable convenient nighttime operation.

INCLUDES MICROPHONE & POWER CABLES . . . and crystals for one channel (specify channel no.). For 12 v., negative ground only, (for 117 VAC operation order GWA-14-1 power supply below); FCC license required. Use must comply with Part 95 of FCC Regulations.
Kit GW-14, 8 lbs., no money dn., $9 mo. **$89.95**
Assembled GWW-14, 8 lbs., no money dn., $12 mo. **$124.95**
Kit GWA-14-1, AC Power Supply, 5 lbs. **$14.95**

GW-14 SPECIFICATIONS—RECEIVER SECTION: General description: 6-transistor superheterodyne circuit with RF amplifier, squelch, noise limiter, 23-channel crystal controlled tuning with tuning and relative signal strength indicator. **Intermediate frequency:** 455 kc. **Sensitivity:** ½ uv or less for a 10 db signal plus noise to noise ratio. **Selectivity:** Adjacent channel attenuation is down 30 db. **Audio power output:** 3 watts minimum. **TRANSMITTER SECTION: Nominal power input to final RF amplifier:** 5 watts. **Frequency control:** 3rd overtone quartz crystal as selected by the 23-position channel selector switch. **Frequency control effectiveness:** Operating frequency will be within .005% of nominal crystal frequency over an ambient temperature range of —20 to +130 degrees F. **Modulation:** High level AM limited to less than 100%. **Output impedance:** 50 ohms nominal. **Output circuit:** Twin "PI" matching network. **Power output:** 3 watts minimum into 50 ohms load. **GENERAL—Controls:** Squelch; off/on volume; channel selector. **Tuning meter:** For receiving, S-9 corresponds to approximately 100 uv signal input. For transmitting, the meter indicates the presence of power output and modulation peak. **Power requirements:** Positive 12 volt system (13.4 volts); receiver current drain, standby—120 ma.; transmitter current drain—750 ma. **Dimensions:** 2-13/16" H x 7" W x 10-7/16" D.

Ⓐ Best Buy Long Range 1 Watt Walkie-Talkie

• Efficient 10-transistor, 2-diode circuit for dependable, trouble-free performance • Up to 3-mile inter-unit communications • Crystal-controlled transmit & receive • Adjustable squelch control & automatic noise limiter • $20 rechargable battery included • Built-in 117 v. AC battery charger • Sturdy, rustproof all-metal case • Simple to build & operate • Complete with power cords, strap, crystals (specify channel) • FCC license required
Kit GW-52A, 4 lbs. . . . no money dn., $7 mo. **$69.95**
Kit GW-52-2, (pair), 8 lbs. . . . no money dn., $12 mo. **$129.95**

Ⓑ Deluxe 9-Transistor Walkie-Talkie

• Range up to one mile between units • Crystal-controlled transmitter & superheterodyne receiver • Built-in squelch & automatic noise limiter • No license required when operated according to FCC Reg. Part 15 • Includes earphone, strap, crystals (specify channel) • Less battery
Kit GW-21A, 3 lbs. . . . no money down, $5 mo. **$39.95**
Kit GW-21-2 (pair) 6 lbs. . . . no money down, $8 mo. **$74.95**
GWA-30, Battery Set (2), 1 lb. **$2.95**

Ⓒ Compact 4-Transistor Walkie-Talkie . . . Ideal for Sports Use

• Range ¼ mile or more between units • Crystal-controlled transmitter–superregen. receiver • Fits in pocket or purse • No license required when operated according to FCC Reg. Part 15 • Includes crystal (specify channel) • Less battery
Kit GW-31A, 2 lbs. **$19.95**
Kit GW-31-2 (pair), 4 lbs. . . . no money dn., $5 mo. **$35.00**
GWA-30, Battery Set (2), 1 lb. **$2.95**

Ⓐ **GW-52A**
$69.95
(pair $129.95)

Ⓑ **GW-21A**
$39.95
(pair $74.95)

Ⓒ **GW-31A**
$19.95
(pair $35.00)

CB CRYSTALS $1.99 EACH WITH ANY TRANSCEIVER ORDER

Heath Marine Electronics . . . Safety

Heath-Built High-Efficiency 150 Watt Marine Radiotelephone With Optional Remote Control Facilities

MWW-15
$425.00
(less remote)

MWA-15-1
$99.00

• 150-watt power input • 8 crystal-controlled transmit and receive channels (2-5 mc) • AM broadcast band reception • 15-watt deck hailing capability • All solid-state receiver circuitry • Operates remotely with MWA-15-1 • Includes new "Local-Distance" switch • Completely assembled & tested • FCC type accepted for party boat use & D.O.T. approved

Here's Safety & Dependability Afloat . . . power to reach out to other ships, the Coast Guard, or telephone company . . . up to 150 miles away! The selection of 8 channels assures communications even under crowded band conditions, and the new "Local-Distance" switch prevents overloading by strong signals. The relative power meter lets you know you are using full power. Cruise with safety . . . choose the MWW-15.

Includes Detailed Installation Manual . . . plus all necessary FCC application forms. Easy to install! Includes crystals for 2182 & 2683 kc. Must be tuned by licensed technician.

Assembled MWW-15, 31 lbs. . . $43 dn., as low as $25 mo. **$425.00**
Assembled MWW-15R, 41 lbs. . . 150 watt 'phone plus remote control. . . write for credit details. **$524.00**
Assembled MWA-15-1 Radiophone remote control unit, 10 lbs. . . no money dn., $10 mo. **$99.00**
Assembled MWA-15-2 Optional Push-to-talk microphone, 2 lbs. . . . **$9.95**
Extra transmit & receive crystals (specify), 1 lb. . . . . ea. **$2.95**
24' Radiotelephone Antenna. . . with laydown swivel base & high impact side mount. Ready to install.
MDP-74, 14 lbs., (Motor Freight or Express Only). . . no money dn., $7 mo. **$69.95**

MWW-15 SPECIFICATIONS—RECEIVER: Frequency range: Marine, 2-5 mc. Broadcast 540-1620 kc. **Sensitivity:** (providing 10 db S/N ratio or better) Marine channels, 2 microvolts; Broadcast, 10 microvolts. **TRANSMITTER: Frequency range:** 2-5 mc marine bands. **Final power input:** 150 watts. **RF output:** 80 watts. **Power requirements:** 12 volts DC. Receiver only, 0.6 amp. Standby, 2.9 amp. Transmit, 20 amps. **Dimensions:** 6½" H x 11¼" W x 17" D.

SPECIAL COMBINATION OFFER . . . SAVE $89.24
Offer Good Until May 31, 1966
Includes MWW-15 Radiophone, MWA-15-1 Remote Unit, MDP-74 24' Antenna, Plus MDP-104 Deck Speaker. Order MWS-2.
$525.00

Remote Control For Heath 150 and 75-watt Radiophones

• The smartest remote control to complement the bridge of any boat • Full remote control for MWW-14A or MWW-15 radiophones • Includes on/off, volume, squelch, mode switch, and channel selector • Telephone handset • Universal gimbal mounting bracket • Completely factory assembled with detailed installation/operating manual included • Styled to match MWW-14A & MWW-15 • Includes 25' of interconnecting cable with all connections preassembled

Provides Complete Remote Control Of Your MWW-14A Or MWW-15 Radiotelephone . . . perfect for flying bridge installations! Order model MWW-15R or MWW-14AR for radiophone and remote control combination completely factory assembled and ready to install. Order for Remote Control alone (MWA-15-1) includes "Remote," all necessary hardware, plus drive motor & instructions for installation in radiophone.

Assembled MWA-15-1, 10 lbs. . . no money dn., $10 mo. **$99.00**

MWA-15-1 SPECIFICATIONS—Front panel controls include: Squelch, On/Off and Volume, Mode—internal speaker—external speaker-handset, Channel selector. **Dimensions:** 5" H x 9" W x 4¾" D.

Notice To Radiophone Buyers! Contact your local Heathkit Electronic Center or Heathkit Service Center (Addresses pg. 2) for tune-up or installation of your Heathkit Radiophone by FCC licensed technician.

Heath-Built 75-Watt Radiotelephone With Optional Remote Control

MWW-14A
$279.95

• 75-watt power input • 6 crystal-controlled transmit and receive channels (2-5 mc) • AM broadcast band tuning • 15-watt deck hailing capability • Transistorized receiver • Operates remotely with MWA-15-1 • Includes new "Local-Distance" switch • Assembled & tested • FCC type accepted for "party-boat" use and D.O.T. Approved

SPECIAL COMBINATION OFFER . . . SAVE $20.19
Offer Good Until May 31, 1966
Includes MWW-14A Radiophone, MDP-13 18' Antenna and MDP-104 Deck Speaker. Order MWS-1.
$340.00

Here's A 75-Watt Marine Radiotelephone That Brings Marine Electronics Up To Date. Includes many of the features of the MWW-15, 150-watt radiophone! Plus, the new "Local-Distance" switch to prevent overloading by strong signals. Compact size, dependable solid-state circuitry, high efficiency with low current demands, and layout of controls "human engineered" to be easy to operate make the MWW-14A one of the most modern marine radiophones of its power class.

Owner's Manual Is Complete . . . gives all the information you need, plus hints on good operation. Includes instructions for installation & FCC application forms. Must be tuned by a licensed technician.

Assembled MWW-14A, 31 lbs. . . No money down, $26 mo. **$279.95**
MWA-14-1 Telephone-type hand set. . . 2 lbs. . . No money down, $5 mo. **$24.95**
Extra transmit & receive crystals (specify), 1 lb. . . . each **$2.95**
Assembled MWW-14AR, 41 lbs. . . 75-watt Radiophone plus remote control. . . $38 dn., as low as $23 mo. **$378.95**
Assembled MWA-15-1 Radiophone remote control unit, 10 lbs. . . no money dn., $10 mo. **$99.00**
18' Radiotelephone Antenna . . . with laydown swivel base & high impact side mount. 2-3 mc band.
MDP-13, 12 lbs., (Motor Freight or Express Only) No money down. $6 mo. **$59.95**

MWW-14A SPECIFICATIONS—RECEIVER: Frequency range: Marine, 2-5 mc. Broadcast, 540-1620 kc. **Sensitivity:** (providing 10 db S/N ratio or better) Marine channels, 2 microvolts; Broadcast, 10 microvolts. **TRANSMITTER: Frequency range:** 2-5 mc marine bands. **Final power input:** 75 watts. **RF output:** 40 watts. **Power requirements:** 12 volts DC. Receiver only, 0.6 amp. Standby, 2.9 amp. Transmit, 16 amps. **Dimensions:** 6½" H x 11¼" W x 17" D.

& Dependability Through Modern Design

Heath-Built 25-Watt Radiotelephone . . . Perfect For The Small Sailing Auxiliary Or Power Craft With Medium Cruising Range

MWW-13AS
$189.95

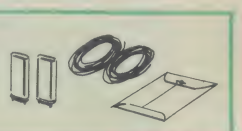
• **Choose the complete MWW-13AS system for owner installation • Choose separate components for installation with technician checkout • 4 crystal-controlled transmit & receive channels • Covers 2-3 mc marine—receives AM broadcast band • 10-transistor, 5-diode, 3-tube circuit • Built-in heavy-duty transistor power supply • FCC type accepted • Factory assembled & tested, ready to install**

Dependable Communications For Mariners On The Go . . . Install the pre-tuned MWW-13AS system yourself . . . all accessories are included. Use the outboard motor for a ground. Or you can purchase the MWW-13A radiotelephone separately. It's easy to install . . . instructions are complete. Just have an FCC licensed technician perform final tune-up. Crystals for 2182 & 2638 kc are included. (Ship-to-shore & distress channels). Enjoy safe cruising next season with the Heath-Built 25-watt radiophone.

MWW-13A SPECIFICATIONS—Frequency range: 2-3 mc. Broadcast: 550-1600 kc. **Receiver sensitivity for 10 DB S/N ratio:** Marine—3 microvolts—Broadcast—10 microvolts. **Audio output:** 3 watts to internal speaker. **Transistor complement:** (1) 2N1525 Mixer; (1) 2N1525 Oscillator; (1) T1364 1st I.F.; (1) 2N1274 1st Audio; (3) 2N1039 Audio Driver & Power Converters; (2) 2N1525 2nd & 3rd I.F.'s; (2) 2N301 Audio Output & Modulator; (6) diodes, AVC, overload, Squelch, Noise Limiter & Detector. **Transmitter RF input:** 25 watts. **RF Output:** 13 RF watts. **Transmitter tube complement:** (1) 6AK6 Oscillator; (2) 6AQ5 amp. **Power requirements:** 12 V DC, receiver only, .350 amps.; standby, 1.2 amps.; transmit, 5 amps. **Dimensions:** 4½" H x 8¼" W x 10½" D.

Assembled MWW-13AS, Complete system for do-it-yourself installation on outboard powered boats only, includes radiophone, antenna & instructions, 22 lbs. . . No money dn., $18 mo. **$189.95**
Assembled MWW-13A, Radiophone for technician installation on any boat, 17 lbs. . . No money down, $16 mo. **$164.95**
MDP-93, 13' Fiberglass Antenna, 5 lbs. . . (Motor Freight or Express only), no money dn., $5 mo. **$34.95**
MDP-103, Swivel lay-down base mount, 2 lbs. **$9.95**
Extra transmit & receive crystals (specify) 1 lb. . . . . each **$2.95**

Complete Package MWW-13AS For Do-It-Yourself Outboard Installation! Includes: 25-watt Radiotelephone, "gimbal" mounting bracket, 13' antenna (MDP-93), antenna cable, ground cable, power cable, crystals, push-to-talk microphone, FCC License pack and complete instructions!



New! Fuel Vapor Detector With Visual And Audible Warning

MI-25
$39.95

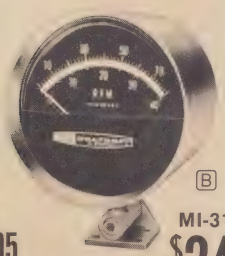
• **New more dependable circuitry • Fully transistorized • Gives both visual and audible warning of combustible gas fumes • Self-testing "Fail-Safe" provision—sounds alarm in the event of component failure • Built-in relay for control of bilge blowers, ignition "disable", or warning lights • Simple to build & install—from package to protection in 3 hours**

Fire At Sea! . . . Your Most Fearsome Peril! You can't afford to overlook any precaution or safety feature. A sensitive Fuel Vapor Detector is your best assurance against explosion due to accumulated fumes. The new MI-25 Fuel Vapor Detector features a performance proven detector "head", plus new advanced circuitry to provide even greater security. In addition to the "SAFE–DANGEROUS–EXPLOSIVE" meter reading, a built-in 2500 cps audible alarm sounds whenever fumes are present. Power & detector cables unplug from unit for fast, easy removal from your boat. The Heathkit MI-25 is your best assurance to a safe voyage.

Kit MI-25, 4 lbs. . . no money dn., $5 mo. **$39.95**

MI-25 SPECIFICATIONS—Voltage: 12 VDC, ±10%. **Current:** 1.0 amp nominal. **Panel size:** 2-1/16" H x 5-11/16" W. **Depth:** 5". **Detector head size:** 1½" round x 2½" long. **Length of interconnecting cable supplied:** 15'. **Color:** Marine white & black. **Material:** Aluminum. **Temp. range:** —-20° C. to +80° C. **Audio alarm:** 2500 cps.

Ⓐ
MP-10
$29.95

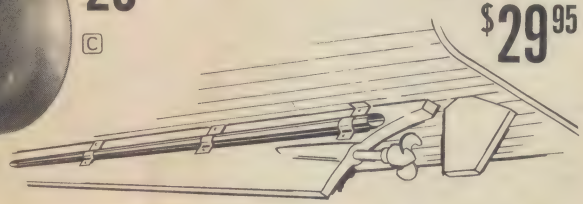


Ⓑ
MI-31A
$24.95

MDP-104
$20.29

Ⓒ

Ⓓ MD-14
$29.95



Ⓐ Heathkit Power Converter . . . For AC Power Afloat

For Boat, Trailer, or Car. Changes 6 or 12 VDC to 110 volt square-wave AC power for small appliances. Not recommended for TV, tape recorders, record players, compressor-type refrigerators which require high starting current and/or standard sine wave current. Write for MP-10 Applications Bulletin.

Kit MP-10, 8 lbs. . . no money dn., $5 mo. **$29.95**
Assembled MPW-10, 8 lbs. . . no money dn., $5 mo. **$39.95**

Ⓑ Heathkit All-Transistor Tachometer

Operates On 6, 12, 24 Or 32 V. DC Systems! Works on all inboard or outboard marine & auto engines (1-6 cylinder, 2 cycle or 1-16 cylinder, 4 cycle) that use standard coil & distributor ignition systems. Switch selection of 0-4000 & 0-8000 rpm ranges, plus wiring option for 0-2000 & 0-4000 rpm. Lighted dial. Ball & socket mount. Positive or negative ground.

Kit MI-31A, 3 lbs. . . no money dn., $5 mo. **$24.95**

Ⓒ University Deck Speaker

Heath Recommended Horn Projector . . . Excellent for use as a deck hailer speaker with the MWW-14A & MWW-15 Radiotelephones. Driver unit and horn are weatherproof with marine gray finish and feature "any angle" swivel mounting. May be repainted to color of your choice. Specs.: 25 watts, 8 ohms, 200-13,000 cps.

Model MDP-104, 7 lbs. . . mfrs. list $34.50 . . . . . Net **$20.29**

Ⓓ Heathkit Marine Electrical Ground System

Extends Radio Range . . . the MD-14 provides adequate grounding for your radiotelephone. Consists of two 8' heavy-gauge copper tubes, tapered at the ends, requires only bolting through keel (min. length 9', max. thick. 5") & one thru-hull fitting. Does not affect balance, steering, or maneuverability.

Kit MD-14, 20 lbs. . . (Motor freight or Express only), no money dn., $5 mo. **$29.95**

Heath Marine Navigational Aids

Heathkit "Mariner" 3-Band Radio Direction Finder For Safe, Sure, All Weather Navigation

• Use your "Mariner" for easy, precise offshore navigating • Use it for entertainment listening on AM radio, or for monitoring the marine channels • Covers Beacon/Consolan, AM & Marine telephone bands • All-transistor circuitry for dependability, long life & low battery drain • Independent built-in battery power supply • Simple to build—complete with factory built & aligned "front-end" tuner and prewired component package

Cruise With Safety . . . Your "Mariner" is always ready to show you exactly where you are through accurate triangulation—as easy as reading a map.

"Mariner" Resolves The Problem Of The Double Null. Strong or weak signals, the front panel "Sensitivity" control sharpens the accuracy of the tuning null. Automatic gain control circuitry makes it a deeper, more distinct null. And a signal phasing sense circuit assures that it is the correct null . . . the true bearing.

True Nautical Styling And Engineering. The spring-return switch provides dial and meter lighting without putting a continuous load on the batteries. "Mariner" is completely portable and independent from "ship" power, since battery power is internal . . . with life up to 1000 hours! The cabinet styling is handsome, practical, and makes a worthy addition to any boat. Easy-to-read step-by-step assembly manual includes installation and operating instructions, plus a section on direction finding theory. Cruise with greater safety . . . take along a "Mariner."

Kit MR-21A, 13 lbs. . . no money dn., $11 mo. **$109.95**

MR-21A SPECIFICATIONS—Beacon band: 188 to 410 kc. **Broadcast band:** 535 to 1620 kc. **Marine band:** 1650 to 3450 kc. **Sensitivity for 6 DB signal-to-noise ratio:** BC band, 40 uv/ meter; Beacon band, 120 uv/meter; Marine band, 25 uv/meter. **Normal bearing accuracy:** ±3°. **BFO:** 455 kc, switch-selected. **Speaker:** 4" x 6" weatherproofed. **Power requirements:** 9 volts from 6 standard size "D" flashlight batteries. **Battery drain:** 90 ma @ 350 mw max. output level. **Battery life:** 500-1000 hours. **Dial light:** Spring-return switch operated. **Null & Tuning indicator:** 0-1 ma meter. **Transistors:** (1) 2N409 Sense amplifier; (1) T1363 RF amp.; (1) 4JX-1D925 Oscillator; (1) 2N1526 mixer; (5) 2N1274 AGC amp., audio amp., audio output & BFO oscillator; (2) T1364 1st & 2nd I.F.; (1) crystal diode detector. **Dimensions:** 10" H x 10" W x 8½" D including base and loop.

Heathkit MI-11A Depth Sounder . . . Best Value Anywhere

• Accurately readable—to 1 foot divisions with 5% accuracy • Reaches down to 200 feet on hard bottoms • Sensitive all-transistor circuit—instant operation, reliable performance • Self-contained or boat battery powered for added convenience • Simple, stable circuit board construction • External power connection & switch on rear panel for easy access

Safety For The Yachtsman . . . A Favorite Aid For The Weekend Fisherman . . . Avoid the embarrassment of running aground . . . or worse yet, the cost of repairs. Spot your favorite fishing ground, or actually "see" schools of fish. Invaluable in a fog. For fun or serious boating, the Heathkit Depth Sounder can be your favorite shipmate.

Compare With More Costly Units! An all-transistor circuit puts your MI-11A in operation instantly . . . keeps it operating faithfully, accurately —within 5% of all readings! And then there's the attractive rustproof metal cabinet with gray, white, black & blue color styling, and gimbal mounting bracket for installation virtually anywhere.

2-Way Power Supply Offers Versatility, Portability! An internal-external battery switch permits convenient selection of self-contained or boat battery operation (uses 9 standard "C" flashlight batteries—not included). Also includes a waterproof transducer.

Assembles In Just 4 To 6 Hours! Fast, stable fiberglass circuit board construction . . . requires no special skills or knowledge.

Kit MI-11A, 8 lbs. . . no money dn., $7 mo. **$69.95**
Model MIA-11, Accessory transducer mount, 2 lbs. **$8.95**

MI-11A SPECIFICATIONS—Dial: 0-200 feet in one foot divisions. **Range:** 0-200 feet on hard bottoms, 0-100 feet on soft bottoms. **Frequency:** 200 kc. **Sounding rate:** 1440 soundings per minute, or 24 per second. **Accuracy:** Within 5% of actual depth. **Depth indication:** Neon lamp flashing at 0 feet and again at indicated depth. **Transducer:** Barium titanate ceramic element encased in a waterproof housing with solid brass fittings; attached 15 foot length of 2 conductor shielded cable. May be mounted permanently to the hull or temporarily with a transom mount. **Controls:** Combined ON/OFF-Sensitivity. **Power supply:** 13.5 volts from nine self-contained size C flashlight cells, or external 12 volt battery. Flashlight cells are contained in three leakproof plastic housings. **Battery drain:** 100 milliamperes. **Average battery life:** Up to 25 hours intermittent operation. **Dimensions:** 7¼" W x 5¼" H x 7½" D.

Heathkit MD-24 . . . Foghorn/Hailer/Boat Horn With A Flip Of A Switch

• All-transistor, 30-watts peak power • 10" weatherproof horn speaker for deck mounting • Fused electronics for protection • Gimbal mounting bracket for versatile installation • Fast, stable circuit board construction

Use It As A Foghorn . . . Just set the function switch to "foghorn" . . . the powerful warning tone sounds for six seconds, rests for twenty seconds, then recycles . . . penetrates the foggy atmosphere for more than one mile.

Use It As A Deck Hailer . . . Sound Off! Excellent for docking & hailing other boats.

Use It As A Boat Horn . . . 30-watts peak power at a touch of the button.

Kit MD-24, Includes basic unit, plus PTT mike & 10" deck speaker, 12 lbs. . . no money dn., $8 mo. **$79.95**

MD-24 SPECIFICATIONS—Output power: 30 watts peak. 20 watts continuous. **Fog horn sequence:** 6 second on, 20 seconds off. **Cable furnished:** 20' speaker cable. **Power requirements:** 12 v. DC, 4.0 amps. Max. (horn sounding), less than 0.1 amp, no signal. **Overall size:** 4⅞" H x 6½" W x 6" D. **Color styling:** White, gray & black. **Cabinet:** Aluminum.

Heathkit® Portables With "Big-Set" Sound!

Deluxe Solid-State AM Portable . . . Makes Distant Stations Sound Local . . . Makes Everything Sound Better!

GR-24
$28.25

• 6 silicon transistor, 2 diode circuit gives 8 transistor performance • Uses standard "D" size flashlight batteries . . . only 1/10 the operating cost of typical pocket-size portables • Large 4" x 6" permanent magnet oval speaker for "big-set" sound • Easy-to-read slide-rule dial • "Thumb-touch" controls • Vernier tuning • Tuned RF stage & double-tuned I.F. stage for greater sensitivity & selectivity • Big ½" diameter built-in rod antenna for distant station reception • Handsome black simulated leather case • Fast, simple circuit board construction

TIRED OF SQUEAKY-VOICED PORTABLES? The kind with the "tinny" sound? The kind that devours batteries? Then it's time you built a Heathkit GR-24. The listening's easy . . . through its large 4" x 6" speaker. No need to turn the volume up full just to hear it. Puts out a full 250 milliwatts from a husky audio output stage that's diode biased for a crisp, bold sound even when battery voltage finally runs low. Its big ½" diameter ferrite rod antenna provides pulling power that rivals hi-fi receivers . . . picks up stations miniatures can't get. For extra sensitivity and selectivity, there's a tuned RF stage and a double-tuned IF stage. Carries easily, too . . . with its compact shape, light weight, and easy-grip handle.

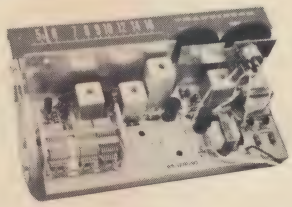
MORE ECONOMICAL THAN MINIATURES, TOO! Costs only 1/10th as much as pocket-size models to operate. Uses 6 size "D" batteries (not included) . . . protected against corrosion by a plastic battery holder.

SMART DESIGNER STYLING . . . ASSEMBLES IN 4 HOURS! Handsomely fashioned black simulated leather case with a chrome-finish plastic frame and anodized aluminum grille make the GR-24 an attractive companion. And for quick simple station selection, there are two "thumb-touch" controls and a slide-rule dial. Assembly takes only about 4 to 6 hours with fast circuit board construction.

Kit GR-24, 5 lbs. . . no money dn., $5 mo. **$28.25**

GR-24 SPECIFICATIONS—Tuning range: 535-1620 kc. **IF frequency:** 455 kc. **Sensitivity:** 50 uv/m for 10 db signal-to-noise ratio at 50 mw output. **Audio output:** 250 mw @ 10% distortion. **Speaker:** 4" x 6" oval permanent magnet type. **Battery:** 9 v; 6 "D" flashlight cells. **Current drain:** No signal: 11 ma; 50 mw audio output: 41 ma. **Dimensions:** 3¾" D x 8¾" W x 7" H (overall).

Runs On 6 Inexpensive Size "D" Flashlight Batteries . . . only 1/10 the operating cost of pocket-size portables. Plastic battery holder protects against corrosion.



Wide, Open Chassis Layout . . . and simple circuit board construction assure fast, easy assembly. Takes around 4 to 6 hours.

GR-151A
$20.65

Explore The Fun Of Kit-Building With This "Beginner's" Solid-State AM Portable . . . Includes FREE Battery & Tool Kit!

• 6-transistor, 3-diode circuit • 4" x 6" speaker for "big-set" sound • Built-in ferrite rod antenna for distant station pickup • Pre-aligned coil and IF transformers assure peak performance • Rugged simulated tan leather case • Fast, simple circuit board construction

GOES FROM PARTS TO PROGRAMS IN JUST 4 TO 6 HOURS! And everything you need to build it is included . . . solder, soldering iron, wire stripper & cutter, screwdriver, nut starter, alignment tool . . . even a 9 v. battery for up to 300 hours of good listening. Simple step-by-step instructions, large exploded diagrams and fast easy circuit board construction assure your success. Give it a try . . . you'll be surprised how much fun it is!

Kit GR-151A, radio, tool kit & battery, 5 lbs. **$20.65**

GR-61
$44.95

Enjoy The Good Listening Of FM Wherever You Go . . . With This Deluxe Solid-State Portable!

• 10 transistor, 2-diode circuit for instant operation, long trouble-free life • Large 4" x 6" PM speaker for hi-fi sound • Automatic Frequency Control for locked-in reception • Treble-cut tone control assures crisp, clear tone • Accurate vernier tuning • 34" telescopic antenna–headphone jack • Simple circuit board construction • Smart tan simulated leather case with curved beige plastic grill

A REFRESHING IDEA IN PORTABLE LISTENING . . . the quiet, crystal-clear beauty of FM with its vast selection of classical and standard favorites. Hear it all with the rugged, "go-anywhere" GR-61. Other features include terminals for an external antenna, push-pull output stage, headphone jack for private listening or connection to your hi-fi system, and 3 IF stages for full fidelity. Preassembled "front-end," prealigned IF transformers and simple circuit board construction assure easy 8-10 hour assembly. Operates on 6 "C" flashlight batteries (not included) . . . plastic battery holder protects against corrosion.

Kit GR-61, 6 lbs. . . no money dn., $5 mo. **$44.95**

GR-61 SPECIFICATIONS—Tuning Range: 88 mc to 108 mc. **IF Frequency:** 10.7 mc. **Audio Output:** 250 milliwatts. **Loudspeaker:** 4" x 6" permanent magnet. **Tone Control:** Treble-cut. **Battery:** 9 volt, 6 "C" flashlight cells. **Battery Life:** 300 to 500 hours. **Dimensions:** 7¾" H x 10" L x 4" D. (overall). **Styling:** Sun-tan simulated leather case, curved beige plastic grille.

Heathkit® Intercoms & Table Radios

GD-51A

$22.95

Enjoy The Step-Saving Convenience Of A Portable "Wireless" Intercom!

• No connecting wires between units . . . just plug into nearest AC or DC outlet, and you're ready for instant communications • All-transistor circuit—built-in AC power supply • Switch-selected choice of 2 operating frequencies • Compact—fits almost anywhere • Add as many units as you wish anytime • Economical—costs less than 3c a month to operate • Attractive 2-tone beige plastic cabinets . . . match any decor • New variable squelch to hush background noise

Just Plug It In, Push The Press-To-Talk Bar To Talk, release to listen . . . that's all there is to it. Saves you valuable steps and time . . . eliminates annoying shouting. Use any number anywhere . . . kitchen, basement, bedroom . . . as long as they operate on the same 117 v. AC power line.

Ideal For Baby-Sitting & Dictation! Press-to-talk bar has a spring-return to "listen" and a "dictate" hold position for keeping tabs on baby, or for predominately one-way transmissions. All-transistor circuit assures instant operation, long life. Squelch circuit minimizes background noise. Choose a pair!

Kit GD-51-2 (pair), 10 lbs. . . No money down, $5 mo. **$45.90**
Kit GD-51A (one station), 5 lbs. **$22.95**

GD-51A SPECIFICATIONS—Power requirements: 105-125 V. 50/60 cycle AC or DC. **Standby power:** 2.5 watts. **Transmit frequency:** 220 kc & 180 kc (switch selected). **Size:** 6¼'' H x 8'' W x 7½'' D.

Complete System

$44.85

All-Transistor Indoor-Outdoor Intercom System . . . Provides An Extra Measure Of Household Security!

• Master unit handles up to 5 remote stations • Ideal for home, offices, commercial institutions • Weatherproof outdoor remote • Powerful one-watt output for crisp, clear communications • Compact, designer-styled cabinets

Outdoor Remote Lets You Identify Callers before opening your door . . . adds to your safety—Especially reassuring late at night or when you're alone. Also ideal for clinics, hospitals, commercial institutions, factories . . . anywhere a network of inside communication is needed.

Private Call Or Paging! Master unit features selective and all-call switches for private inter-unit communications or paging entire remote group. Also any 2 remotes can communicate. Each remote includes 50′ of 3 conductor wire & matching beige plastic cabinet. Weatherproof outdoor remote features rust-proof grille, specially-coated speaker, doorbell button & 50′ of 3-wire cable. Order the complete set now!

Kit GD-141 Outdoor Remote, 2 lbs. **$5.95**
Kit GD-121 Master Station, 6 lbs. . . No money down, $5 mo. . . **$29.95**
Kit GD-131 Indoor Remote, 4 lbs. **$8.95**

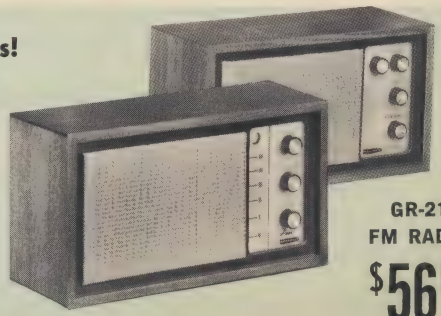
SPECIFICATIONS—Power requirements: 117 v ac 50/60 cycles. 2.5 watts (idling), 3.5 watts (full output). **Transistors:** four 2N1274. **Dimensions:** 6¼'' H x 8'' W x 7½'' D (master), 5'' H x 8'' W x 6'' D (indoor remote), 5¾'' x 4½'' panel size (outdoor remote).

Here's A Matching Pair For FM Stereo That's Ideal For Limited -Space Areas!

• Monophonic FM table radio covers 88 to 108 mc • Receives FM stereo when used with matching GRA-21-1 stereo converter • Large 6″ x 9″ speakers • Automatic frequency control • Preassembled, prealigned tuning unit speeds assembly • Handsome walnut cabinets

Place Up To 15′ Away For "Concert-Hall" Stereo! Ideal for your rec room, living room, bedroom, or a student's dormitory. GR-21 FM radio may be used separately . . . includes magic "eye" tuning, built-in antenna, lighted dial and safe transformer operation. Both units feature large 6″ x 9″ dual-cone speakers. Simple controls for mono or stereo FM selection, volume & tone. Each walnut cabinet measures 15″ L x 8″ H x 6″ D.

Kit GR-21, FM Table Radio, 18 lbs. . . no money dn., $6 mo. **$56.95**
Kit GRA-21-1, Stereo Converter, 18 lbs. . . no money dn., $5 mo. **$47.00**

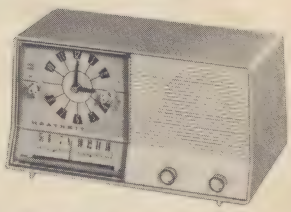


GRA-21-1 STEREO CONVERTER

$47.00

GR-21 FM RADIO

$56.95



GR-121

$28.25

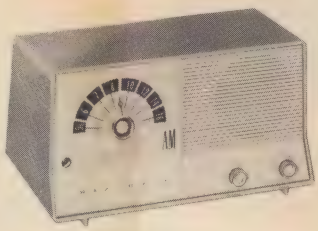
Wake Up In A Happy Mood With This Versatile AM Clock Radio!

• Timer outlet operates household appliances • Sleep switch—radio alarm—output jack for pillow speaker • Safe transformer operation

Starts Your Day On The "Bright" Side! Gently wakes you to music, automatically starts the coffee, entertains you throughout the day, then lulls you to sleep at night. 5-tube circuit has built-in antenna and clock/timer with sweep-second hand. Automatically turns itself off at any interval up to an hour. To insure "wake-up" an alarm sounds after 10 minutes. Ivory & beige plastic cabinet. Assembles in 4-6 hours.

Kit GR-121, 8 lbs., no money dn., $5 mo. **$28.25**

GR-121 SPECIFICATIONS — Circuit: 5-tube superheterodyne. **Frequency coverage:** 535-1620 kc. **IF frequency:** 455 kc. **Power supply:** 115 v., 60 cycle, AC only. **Speaker:** 3'' PM. **Controls:** on/off volume, tuning. "Sleep Switch," "Radio Alarm." **Dimensions:** 5'' H x 10'' W x 5'' D.



GR-10

$16.95

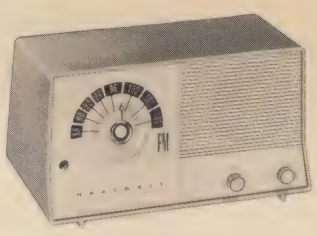
AM Table Radio . . . Ideal For Any Room In The House!

• Transformer operated • Superheterodyne circuit • Vernier tuning

Features Superhet Circuit with automatic volume control and vernier tuning for smooth, easy station selection. Includes built-in antenna plus terminals for external antenna. Handsomely fashioned in ivory & beige plastic cabinet. Safe transformer operation. Add that extra radio now with this easy to build, top performer!

Kit GR-10, 7 lbs. **$16.95**

GR-10 SPECIFICATIONS—Frequency coverage: 535-1620 kc. **IF frequency:** 455 kc. **Power requirements:** 105-125 volts AC 50/60 cps. **Speaker:** 3'' PM. **Antenna:** built-in ferrite rod. **Dimensions:** 5'' H x 10'' W x 5'' D.



GR-11

$23.50

FM Table Radio . . . Full, Rich Sound, Modern Styling!

• Transformer operated • Preassembled, prealigned tuning unit for easy assembly

Add Superb FM Listening To Any Room with this compact, easy-to-build table radio! Five tubes function as seven in its safe, transformer operated circuit. Features line cord antenna for strong local station reception. All components are pre-tuned for fast assembly . . . goes together in only 4 hours. Handsome ivory & beige plastic cabinet!

Kit GR-11, 7 lbs. **$23.50**

GR-11 SPECIFICATIONS—Frequency coverage: 88—108 mc. **IF frequency:** 10.7 mc. **Power requirements:** 105-125 volts AC 50/60 cps. **Speaker:** 3'' PM. **Antenna:** built-in line, provision for external antenna. **Dimensions:** 5'' H x 10'' W x 5'' D.

Heathkit® Photo Aids!

Don't Waste Paper To Get A Perfect Print . . . Get The RIGHT Exposure The FIRST Time With The Fotoval® Computer!

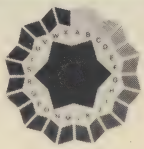
• Accurately & scientifically indicates correct exposure times & photographic paper grades • Cuts darkroom time, reduces paper costs, speeds your enlarging • Quickly produces correctly exposed prints everytime • Gimbal mounting bracket allows installation in any position • Completely safe lighted to permit easy darkroom reading of meter indications • Simple to assemble and operate

Eliminates Costly Makeovers . . . Saves You Time, Paper & Money! The revolutionary Heath/Mitchell Fotoval Darkroom Computer analyzes any negative, and automatically provides correct exposure times . . . matches negative contrast with printing paper. Guesswork is eliminated through accurate measurement . . . you produce perfect enlargements every time! No long, laborious hours wasted in the darkroom.

Monitors Darkroom Variables . . . Leaves You Free For Creative Work! With a unique 35mm Test Negative, you predetermine accurate exposure for each type of paper stock or variable contrast filter you use. Once correct time is established, there's no need for test strips or wasted paper. Next, choose the desired paper type, and insert the corresponding computer scale into the Fotoval. Place the negative you wish to print in the enlarger. With the Fotoval light-sensitive probe positioned on the desired detailed black, adjust the meter to full scale using the enlarging lens diaphragm. Then meter the most desirable highlight, and read the exposure time & paper grade (or filter) directly from the computer. Expose for the indicated time and develop. That's all there is to it. Fotoval even lets you print now, develop later!

For The Novice As Well As The Professional! The easy operation makes it simple for the beginner to experience remarkable results, even if he's never attempted enlarging before. As easy to build as it is to use. Free descriptive brochure available.

Kit PM-14, 8 lbs. . . . no money dn., $9 mo. **$89.00**



Calibration Negative . . . helps you predetermine correct exposure time for each contrast grade of paper, and best choice for every negative.

Light-Sensitive Probe . . . incorporates all important switching. Measures extremely small light areas when scanning negative for desired highlights. Fits easily in easel corners. Magnetized base.

With The Heathkit Photo Timer, You Control Exposures In Tenths Of A Second!

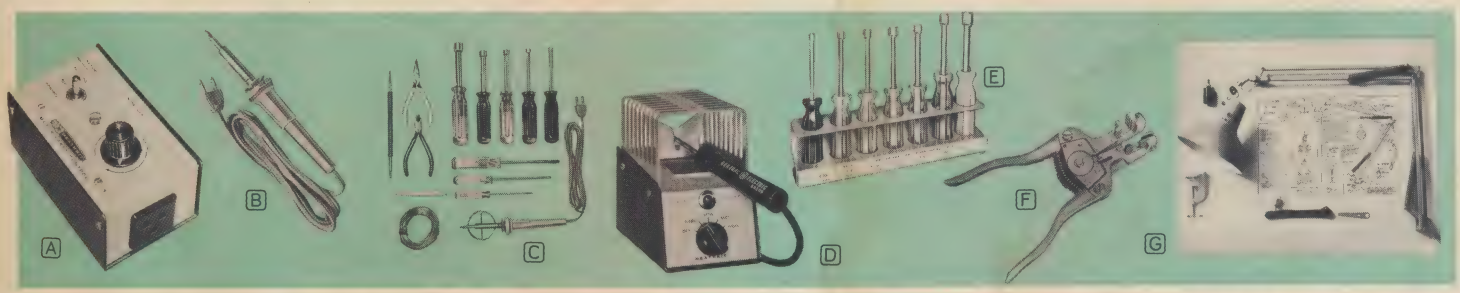
PT-15
$24.95

• Controls exposure time of contact or enlarging printing • 2 switch-selected ranges . . . up to 99 seconds in 1 second steps, or 9.9 seconds in 0.1 second steps . . . permits accurate resetting of any interval • Repeatability accurate within 2% on all settings • Enlarger & safelight AC outlets • All-electronic circuitry . . . no gear mechanisms to wear out • Time-Focus rocker switch to turn enlarger on or off manually • Install on wall, place upright or face up on working surface • Styled to match Fotoval Computer (above) • Easy to assemble & use

Quick & Simple To Use! Simply set the desired exposure time and push the "start" button. The PT-15 Photo Timer turns on the enlarger and extinguishes the safelight. At the end of the pre-selected interval, it automatically turns the enlarger off and the safelight on. To quickly expose more than 1 print, just tap the "start" button to repeat the cycle . . . every exposure will be accurate within 2% of the first interval. A spring-return "stop" switch halts exposure process, if you decide time interval is incorrect.

Kit PT-15, 4 lbs. . . . no money dn., $5 mo. **$24.95**

PT-15 SPECIFICATIONS—Timed cycle: x1.0 Range: 1 to 99 seconds in 1-second steps. x0.1 Range: 0.1 to 9.9 seconds in 0.1-second steps. **AC outlets:** Enlarger and safelight; each outlet provides 105-125 v. AC @ 350 watts maximum (3 amperes). **Accuracy:** Actual timed cycle will be within 5% of time selected. **Repeatability:** All timed cycles at one selected setting within 2% of each other. **Switches:** 0-90 seconds, in 10-second steps; 0-9 seconds in 1 second steps; start pushbutton; Time-Focus; Stop; Range, x1.0 & x0.1; On-Off. **Controls:** x1.0 calibration; x0.1 calibration; sensitivity. **Regulation:** Internal circuits regulated at 150 volts DC by an OA2 regulator tube. **Power requirements:** 105-125 v. AC, 50/60 cps, 6 watts. **Dimensions:** 6⅝" W x 6½" D x 3¼" H overall



Ⓐ Add Longer Life To Drills, Bits, & Blades With A Heathkit Motor Speed Control!

• Adjustable control dials desired motor speed • SCR with feedback circuit slows motor yet maintains high torque power • Use with tools, appliances with universal AC-DC motor rating up to 15 amps only. Not for AC induction motors.
Kit GD-973A, 3 lbs. **$17.50**

Ⓑ "Little Dandy" Soldering Iron . . . Ideal for Kit-Building

• Perfectly balanced, lightweight, easy to handle • Reaches working temperature 2 minutes after plug-in, stays hot • 30-watt heating element • Iron-clad tip won't corrode, doesn't require frequent "tinning"
Model GDP-105, 1 lb. **$5.40**

Ⓒ New Deluxe Tool Set . . . Use For Kit-Building Or Any Fix-It Job!

• Combination wire stripper & diagonal sidecutter • Midget longnose pliers; 3 screwdrivers (3/32", ⅛", 3/16") • "Little Dandy" soldering iron (above) • 5 nut drivers (3/16", ¼", 5/16", ⅜", ½") • Nut starter, soldering aid, radio solder, and "Kit-Builder's Guide" with soldering instructions
Model GH-25, 4 lbs. **$16.95**

Ⓓ Heathkit Soldering Iron—Versatile, Easy To Build & Use

• Lightweight . . . ideal for Kit-building • 6 volt, 25 watt GE midget iron with non-corroding tip • Transformer operated power supply offers selection of 8 heat ranges for every soldering job • Protective metal cage
Kit GH-52, 5 lbs. **$14.95**

Ⓔ Vaco Hollow Shaft Nut Driver Set No. S-700

• 7 drivers—sizes: 3/16", ¼", 5/16", 11/32", ⅜", 7/16", ½" • Hollow shafts for nut installation on switches, controls • Store in self-supporting metal rack • Tough, color-coded plastic handles
Model GDP-204, 3 lbs. **$6.42**

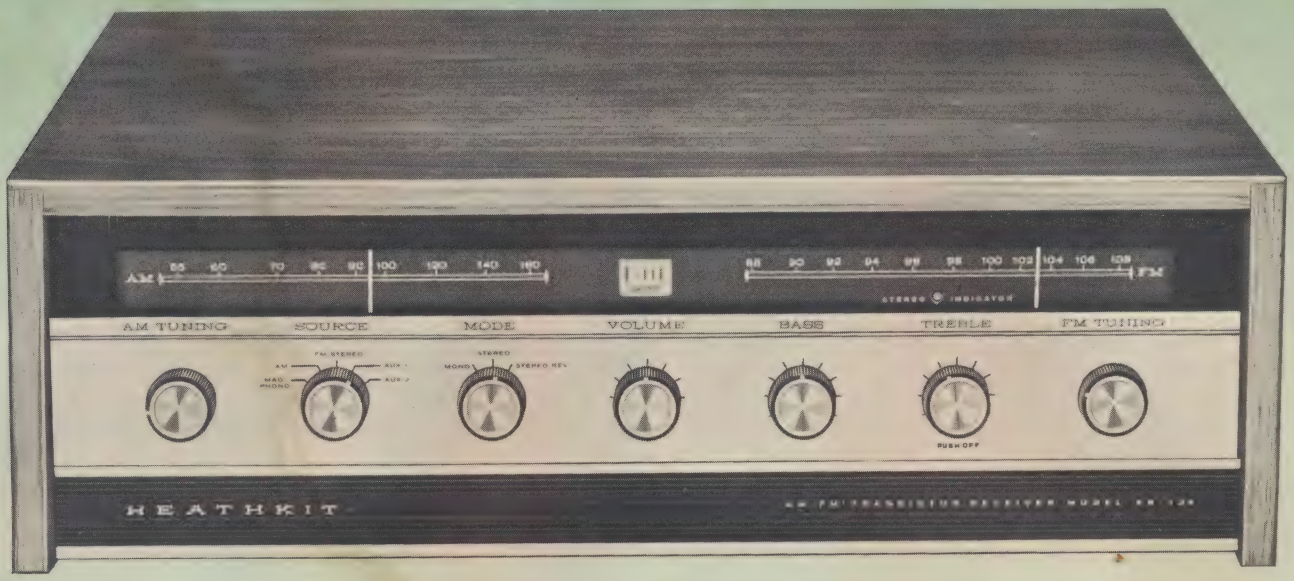
Ⓕ Speedex Wire & Cable Stripper Model 766-1 . . . Save $4.06!

• Simple to use—insert wire into jaws, squeeze handle—insulation comes off just that fast • Graduated jaws accept No. 10, 12, 14, 16, 22 wire • Manufactured by General Cement
Model GDP-663, 2 lbs. . . . Mftrs. list $9.95. . . . . **Only $5.89**

Ⓖ Z-Lyte 210 Extension Lamp Kit

• Assembled extension arm—just attach socket, shade & cord • 45" reach, 360° sweep • Vented shade • Movable • U.L. approved • Less incandescent bulb
Kit GDP-202, 5 lbs. . . . Mftrs. list $14.50. . . . . **Only $9.95**

Now Choose From Two Heathkit® All-Transisto



AR-13A

$184.00

Acclaimed By Experts . . . Praised By Owners . . . Heathkit 66-Watt AM/FM/FM Stereo Receiver . . . With All-Transistor Reliability & Performance!

• 46 transistor, 17 diode circuitry for cool, instant, economical operation and the crisp, natural beauty of "transistor sound" • Compact, yet houses two 33-watt power amplifiers . . . two pre-amplifiers . . . and wide-band AM/FM/FM Stereo tuner • Built-in stereo demodulator . . . automatically switches to stereo • Built-in stereo indicator light • Filtered outputs for direct, "beat-free" stereo recording • Provides 66 watts IHF music power, 40 watts rms from 15 to 30,000 cps • Luxurious walnut cabinet styled in Heathkit low-silhouette motif • Preassembled, prealigned "front-end" and AM-FM I.F. strip aid construction

NOTED HI-FI EDITOR, JULIAN D. HIRSCH REVIEWS THE AR-13A! In the Nov. '65 issue of Hi-Fi/Stereo Review, Mr. Hirsch said: *"Unlike many transistor amplifiers, the AR-13A has low IM distortion at low power levels: under 1 per cent up to 4 watts" . . . "The AR-13A had a remarkably flat power response" . . . "Hum and noise were inaudible" . . . The FM tuner proved to be quite sensitive" . . . "drift is negligible" . . . The FM Stereo channel separation was excellent" . . . "It is one of the finest integrated stereo receivers I have seen, comparable to many factory-wired tuners costing far more".* Compare the AR-13A's features!

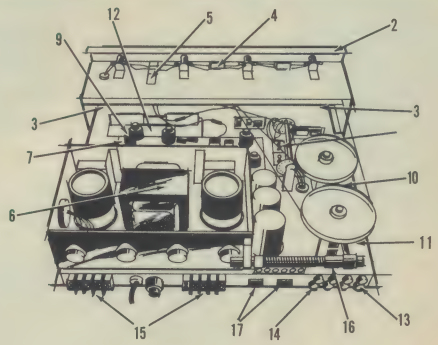
VERSATILE PERFORMANCE! There's wide-band AM, FM, and FM stereo tuning for reception to delight the most critical ear. It has two preamps. And coupled with its two power amplifiers, the AR-13A provides 66 watts of IHF music power, 40 watts of continuous sine-wave power. All this is housed inside one luxurious, compact walnut cabinet . . . just connect two speakers for a complete stereo system.

THERE ARE PLENTY OF OPERATING CONVENIENCES TOO! A solid-state circuit automatically channels the signal through the built-in stereo adapter when stereo is received. Then the automatic stereo indicator lights. The tape recorder outputs are filtered for direct "beat-free" recording. There are dual-tandem controls for simultaneous adjustment of volume, bass, and treble of both channels; a separate control for balancing both channels; and 3 stereo inputs—mag. phono and two auxiliaries. The AM tuner features a high gain RF stage & a high Q rod antenna. The FM tuner has a built-in line cord antenna plus external antenna connectors.

BUT THAT'S NOT ALL! There's a local-distance switch for optimum reception in all signal areas; an FM squelch control; AFC for drift-free reception; plus flywheel tuning, tuning meter, and lighted AM & FM slide-rule dials for fast, easy station selection. The secondary controls are concealed under the hinged lower section of the gold anodized aluminum front panel to prevent accidental system setting changes. Both FM front-end and the AM-FM I.F. strip are pre-assembled and prealigned to simplify construction.

Kit AR-13A, 35 lbs. . . no money dn., $18 mo. **$184.00**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Important: The AR-13A is exempt from any Special System Discount.

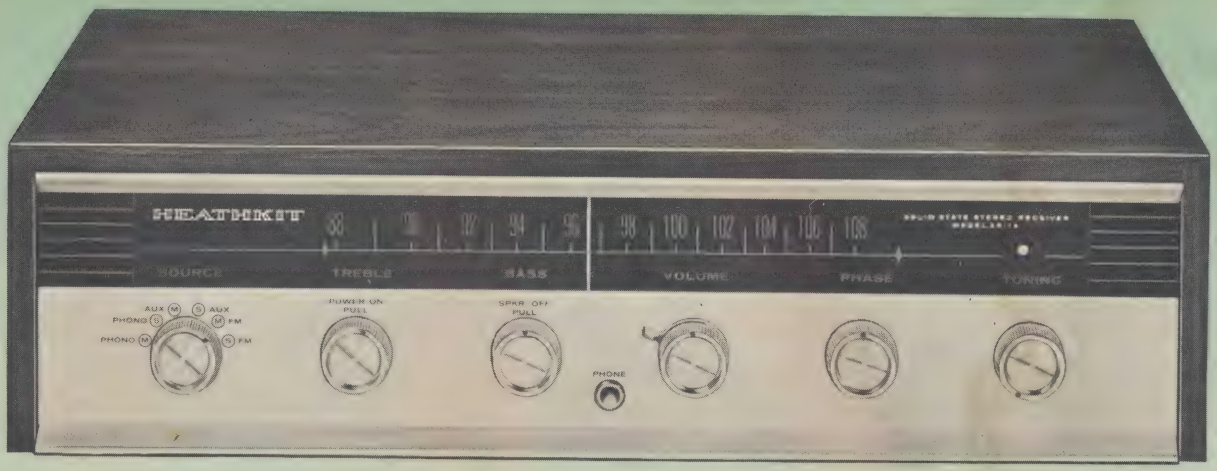


The Latest "Solid-State" Circuitry & Features

1. Pre-assembled pre-aligned AM/FM IF strip **2.** Gold anodized extruded aluminum front panel **3.** Flywheel tuning **4.** Tuning meter **5.** Stereo indicator light **6.** Transformer operated power supply **7.** Built-in stereo demodulator **8.** Built-in line antenna FM (not shown) **9.** 19 kc and 38 kc output filter **10.** Pre-assembled, prealigned FM front end **11.** AM RF amplifier stage **12.** Circuit modules **13.** Three stereo inputs **14.** Low impedance tape recorder outputs **15.** Transformerless 4, 8, and 16 ohm outputs **16.** AM rod antenna **17.** Switched and unswitched line outputs.

AR-13A SPECIFICATIONS—Recommended system mates: Speaker systems: AS-10 or AS-51, ppg. 28-29; separate speaker: AS-183, pg. 30; all changers, ppg. 26-27. **AMPLIFIER: Power output per channel (Heath Rating):** 20 watts/8 ohm load, 13.5 watts/16 ohm load, 9 watts/4 ohm load. (IHF Music Power Output): 33 watts/8 ohm load, 18 watt/16 ohm load, 12 watts/4 ohm load @ 0.7% THD, 1 kc. **Frequency response:** ±1 db from 15 cps to 30 kc @ rated output; ±3 db from 10 cps to 60 kc @ rated output. **Harmonic distortion (at rated output):** Less than 1% @ 20 cps; less than 0.3% @ 1 kc; less than 1% @ 20 kc. **Intermodulation distortion (at rated output):** Less than 1%, 60 & 6,000 cps signal mixed 4:1. **Hum & noise:** Mag. phono, 50 db below rated output; Aux. inputs, 65 db below rated output. **Channel separation:** 40 db @ 20 kc, 60 db @ 1 kc, 40 db @ 20 cps. **Input sensitivity: (for 20 watts output per channel, 8 ohm load):** Mag. phono, 6 MV; Aux. 1, .25 v; Aux. 2, .25 v. **Input impedance:** Mag. phono, 35 K ohm; Aux. 1, 100 K ohm; Aux. 2, 100 K ohm. **Outputs:** 4, 8, & 16 ohm and low impedance tape recorder outputs. **Controls:** 5-position Selector; 3-position Mode; Dual Tandem Volume; Bass & Treble Controls; Balance Control; Phase Switch; Input Level Controls (all inputs except Aux. 2); Push-Pull ON/OFF Switch. **FM: Tuning range:** 88 mc to 108 mc. **IF frequency:** 10.7 mc. **Frequency response:** ±3 db, 20 to 15,000 cps. **Capture ratio:** 3 db. **Antenna:** 300 ohm balanced (internal for local reception). **Quieting sensitivity:** 1½ uv for 20 db of quieting, 2 uv for 30 db of quieting. **Bandwidth:** 325 kc @ 6 db down with 1000 uv input. **Image rejection:** 35 db. **IF rejection:** 70 db. **AM suppression:** 35 db. **Harmonic distortion:** Less than 1%. **STEREO MULTIPLEX: Bandpass:** ±¼ db, 50 to 53,000 cps. **Channel separation:** (SCA Filter Off) 30 db, 50 to 2,000 cps. 25 db at 10 kc. **19 KC 38 KC Suppression:** 45 db down from rated output at 1 kc. **SCA Rejection:** 35 db down from rated output. **AM Tuning range:** 535 to 1620 kc. **IF frequency:** 455 kc. **Sensitivity:** 30 uv @ 600 kc; 9 uv @ 1000 kc. **Bandwidth:** 8 kc @ 6 db down. **Image rejection:** 40 db @ 600 kc. **IF rejection:** 55 db @ 1000 kc. **Harmonic distortion:** Less than 2% with 1000 uv input; 400 cps with 30% modulation. **Hum & noise:** 40 db. **Overall dimensions:** 17" L x 5½" H x 14¾" D. **Power requirements:** 105-125 volts, 50-60 cps AC, 30 watts idling, 110 watts max.

Stereo Receivers—66 Watts or 30 Watts



AR-14
$99.95
(less cabinet)

OVER-Engineered and UNDER-Priced . . . The New Heathkit 30-Watt FM/FM Stereo Receiver Offers Fine Performance For Only $99.95

• 31 transistor, 11 diode circuit for cool, instant operation with the transparent, natural sound only transistors can deliver • ± 1 db, 15 to 50,000 cps, at 10 watts per channel continuous (20 watts total), 15 watts per channel IHF music power (30 watts total) • Wideband FM/FM stereo tuner plus two preamplifiers and two power amplifiers • Front panel stereo headphone jack • Compact—just 3⅞" H x 15¼" W x 12" D • Custom install it in wall, your own cabinet, or either Heath cabinet • Build it in 20 hours

A Better Performer Than Most, A Better Buy Than Any! That's the new AR-14 Transistor Stereo Receiver with advanced solid-state circuitry to bring you sensitive FM stereo, plus 30 watts of IHF music power . . . all in a single compact unit. And all at the low $99.95 price . . . proof that your dollar buys more with Heath!

Compare With Far More Costly Receivers! The AR-14 has 31 transistors and 11 diodes for clean, transparent sound . . . cool, instant operation . . . and long, trouble-free life.

Two preamplifiers and two power amps provide an extremely wide frequency-power response of ±1 db from 15 to 50,000 cps at full power in both channels.

And its sensitive FM tuner eagerly seeks stations, far and near . . . and you'll like the easy way the flywheel tuning dial glides across the band. Built-in AFC automatically locks in stations.

For beat-free tape recordings, the tuner outputs are filtered. And the output power drives all but the most inefficient speaker systems.

A new transformerless complementary output amplifier circuit insures minimum phase shift, widest response, and lowest distortion.

Front-Panel Controls For Full Command! Include a six-position source switch for mono and stereo tuner, phono and an auxiliary; dual concentric volume control to individually adjust each channel for desired loudness; tandem treble control with push-pull power switch; and tandem bass control with push-pull speaker on-off switch for use when listening with stereo headphones from the convenient front panel jack.

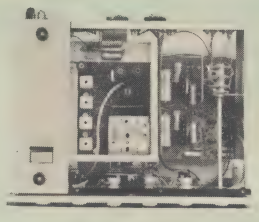
You'll especially appreciate the FM stereo phase control. Just pull out on the control knob and dial for maximum loudness. Then push the control knob in, and you have the best possible stereo separation. There's also a stereo indicator light that automatically signals when stereo is broadcast.

Bookshelf Size, 3-Way Installation Versatility! Measures just 3⅞" H x 15¼" W x 12" D . . . a boon for limited-space areas. Looks sleek and modern, too, with its handsome anodized aluminum front panel that fits neatly in a wall, your custom cabinet, or in either of the optional Heath walnut veneer or beige steel cabinets. Marry it with two speakers (handles 4, 8 or 16 ohm impedances), settle back, and enjoy.

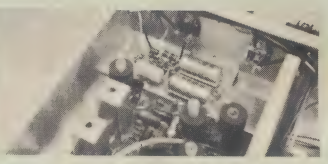
Kit AR-14, 17 lbs., less cab. for custom mtg. . . no money down, $10 mo. **$99.95**
Model AE-55, 6 lbs., walnut veneer cabinet. **$9.95**
Model AE-65, 6 lbs., beige steel cabinet. **$3.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Important: The AR-14 is exempt from any Special System Discount.

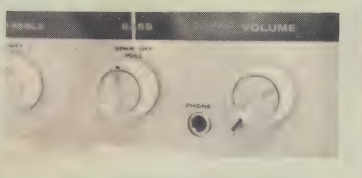
Compact Size . . . only 3⅞" H x 15¼" W x 12" D. Yet contains wideband FM/FM Stereo tuner, two preamplifiers and two power amplifiers. Install in a wall, custom or either Heath cabinet.



Solid-State Power Supply . . . Bridge rectifier and 4000 ufd filter circuit. Insures full power at each frequency throughout its wide 15-50,000 cps range.

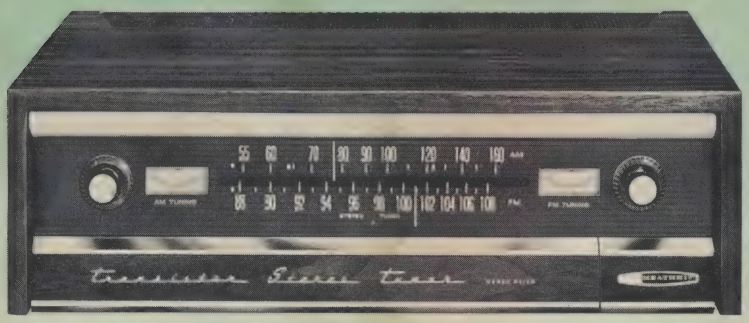


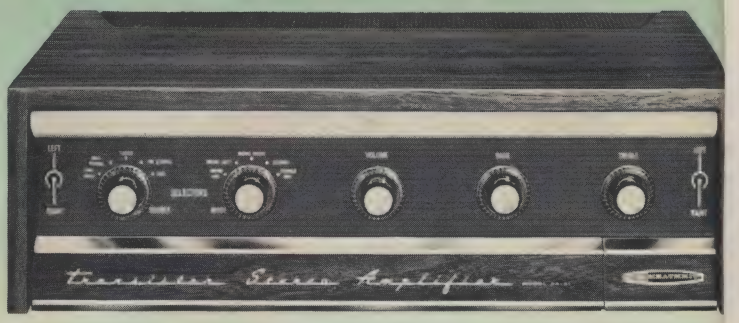
Front Panel Stereo Headphone Jack . . . for the convenience of private listening. Simply plug headphones in, and turn the speakers off with the push-pull on-off switch on the bass control.



AR-14 SPECIFICATIONS—Recommended system mates: All speakers & speaker systems, ppg. 28, 29, 30, except AS-2A & AS-2U; all changers & turntables, ppg. 26 & 27. **AMPLIFIER: Continuous power output:** 10 watts each channel—20 watts total. **Music power output (IHF):** 15 watts per channel. **Speaker output impedance:** 4 through 16 ohm. **Tape output impedance:** 3.5K ohm. **Damping factor:** 50. **Hum and noise:** Phono: —60 db; Auxiliary: —63 db. **Frequency response:** 12 to 60,000 cps ±1 db; 6 to 100,000 cps ±3 db. **Power response:** 15 to 50,000 cps ±1 db; 7 to 90,000 cps ±3 db. **Input sensitivity:** Phono: 4.5 mv; Auxiliary: 300 mv. **Input impedance:** Phono: 47K ohm; Auxiliary: 180K ohm. **Channel separation:** 45 db or better. **Total harmonic distortion (at rated output):** .5% or less @ 1000 cps, 1% or less @ 20 & 20,000 cps. **Intermodulation distortion (at rated output):** Less than 1% (60 & 6,000 cps, 4:1). **Phono equalization:** RIAA. **Transistor complement:** (2) 2N3391* 1st preamp; (7) 2N2712* 2nd, 3rd preamp, 1st pre-driver, electronic filter; (2) 2N3416* 2nd pre-driver; (2) 2N3053* driver; (2) TA2577A output; (2) 2N2148* output. **Diode complement:** (2) IN3754* Reference diode; (4)F1* Bridge rectifier. **Front panel:** 6-position Source Switch: Mono-Phono; Stereo Phono; Mono Auxiliary; Stereo Auxiliary; Mono FM; Stereo FM; Volume Control; Bass control; Treble Control; Phone Jack. **Rear panel:** Fuse AC Power Socket: Switched & Unswitched. Speaker Terminal Blocks; One Left & One Right Speaker. Ground Terminals: 1; Triple Phone Sockets. **Power requirement:** 105-125 volts 50/60 cps; 32 watts idling; 65 watts full output; (No load on AC power sockets). **Dimensions:** Overall 15¼" W x 3⅞" H x 12" D. **Mounting position:** Horizontal or Vertical; Cutout required 15" x 3½"; Depth required from front of mounting surface 11½". **FM: Tuning range:** 88-108 mc. **Antenna:** Balanced input for external 300 ohm antenna. **Intermediate frequency:** 10.7 mc. **Sensitivity (IHF):** 5 uv for less than 3% total noise, distortion hum —30 db. **Hum & noise (IHF):** —50 db. **Audio frequency response (IHF):** 0 to —3 db from 20 to 15,000 cps. **Harmonic distortion (IHF):** 1% or less. **Image ratio (IHF):** —40 db. **Capture ratio (IHF):** 3 db. **AFC correction:** 150 KC per volt. **AM suppression (IHF):** —35 db. **IF rejection (IHF):** —80 db. **FM STEREO: Separation:** 30 db @ 1 KC. **Transistor complement:** (1) TI XM201* RF amp.; (1) TI XM203* osc.; (1) 2 SA240 mixer; (4) 2N2654 IF amp. & Limiter; (7) 2N2712 multiplex amp, 19 KC amp, emitter follower, 38 KC osc., switching detectors, stereo indicator amps.
*or equivalent.

Your Best Values In Transistor Stereo

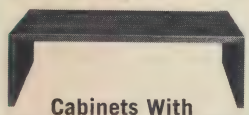




• 25-transistor, 9-diode circuit for pure, natural "transistor sound", heat-free operation • AM/FM/FM stereo tuning • Automatic stereo switching • Automatic stereo indicator light • Filtered outputs for direct, beat-free recording • Separate AM & FM tuning meters • Stereo phase control for maximum separation, minimum distortion • Automatic Gain Control for even, steady volume • Versatile installation . . . choose unit without a cabinet, or with either walnut wood cabinet or tan vinyl-clad steel cabinet

AJ-43D **$109.00**
(less cabinet)

FREE...



Cabinets With Deluxe Stereo Combo!
A pair of AE-11 walnut cabinets are yours FREE . . . when you order both the AA-21D amplifier and matching AJ-43D tuner! Offer expires May 31, 1966.

• 26-transistor, 10-diode circuitry for smooth, uncompromising power response . . . 13 to 25,000 cps ± 1 db at 35 watts rms per channel (50 watts IHF music power) • Concert hall realism, cool instant operation, complete freedom from microphonics • Encapsulated, epoxy-covered modules for fast, simple assembly • Versatile installation . . . choose unit without a cabinet, or with either a walnut wood or tan vinyl-clad steel cabinet . . . matches AJ-43D

AA-21D **$137.00**
(less cabinet)

Eagerly Seeks Stations Far And Near . . . Deluxe Transistor AM/FM/FM Stereo Tuner!

JUST PUSH THE UNIQUE "PUSH-PUSH" SWITCH AND LISTEN! You hear each voice, each instrument, each note like you've never heard it before. The sound is cleaner, more natural thanks to the AJ-43D's all solid-state circuitry. Notice the freedom from distortion and hum . . . the crisp, full reproduction that only transistors can achieve. Notice the cool, instant operation . . . the complete selection of AM/FM/FM Stereo with hyper-sensitive reception. Notice the price . . . only $109.00 . . . a better-than-ever buy!

DELUXE PERFORMANCE, DELUXE FEATURES . . . like automatic switching to stereo . . . automatic stereo indicator light . . . automatic frequency control for positive tuning . . . emitter-follower outputs for superior fidelity . . . lighted slide rule dial . . . heavy flywheel tuning . . . transformer operated power supply.

EASY TO BUILD. Factory built and aligned "front-end" and 4-stage FM I.F. circuit board gets the job off to a fast start, assures professional performance. You'll enjoy the circuit board construction.

Kit AJ-43D, 15 lbs., less cabinet for custom mounting . . .
no money down, $11 mo. **$109.00**
Model AE-11, 8 lbs. Luxurious walnut wood cabinet. **$12.95**
Model AE-15, 8 lbs. Tan vinyl-clad steel cabinet. **$6.95**

AJ-43D SPECIFICATIONS—FM SECTION (Monaural Only): Tuning range: 88 to 108 mc. **Intermediate frequency:** 10.7 mc. **Antenna:** 300 ohms balanced, internal line antenna provided. **Quieting sensitivity:** (400 cps, 100% mod.) 1.5 uv for 20 db of quieting; 2 uv for 30 db of quieting; 3 uv for full quieting, 40 db. **Image rejection:** 35 db. **IF rejection:** 75 db. **Capture ratio:** 3 db. **AM suppression:** 35 db. **Bandwidth (Complete Tuner):** 325 kc at 6 db down, 1000 uv input. **Detector bandwidth (Peak-to-Peak):** 600 kc. **Harmonic distortion:** Less than 1% (IHF). **Hum & noise:** (Complete tuner) 55 db below full quieting (IHF). **Output impedance:** (Emitter Follower) Variable to 3000 ohms. **Output voltage:** 1 V. @ 1000 uv, 400 cps 100% mod. **FM STEREO CONVERTER SECTION: Converter bandpass:** 50 cps to 53,000 cps, ±¼ db. **Channel separation:** 40 db @ 50 cps to 2,000 cps; 30 db @ 10,000 cps; 20 db @ 15,000 cps. **19 KC suppression:** 50 db down. **38 KC suppression:** 45 db down. **SCA rejection:** 30 db min. 64 kc to 70 kc. **Hum & noise:** 55 db down. **Output voltage:** 1 V. @ 100 uv input, 400 cps, 100% mod. **Output impedance:** (Emitter Follower) Variable to 3000 ohms each channel. **AM SECTION: Tuning range:** 535 to 1620 kc. **Intermediate frequency (IF):** 455 kc. **Sensitivity:** 600 kc, 7 uv for 10 db. S/N; 1000 kc, 4 uv for 10 db S/N ; 1400 kc, 3 uv for 10 db S/N. **Antenna:** Built-in rod with provisions for external straight wire. **Image rejection:** 50 db at 600 kc; 70 db at 1400 kc. **IF rejection:** 55 db at 600 kc.; 65 db at 1400 kc. **10 KC rejection:** 40 db. **Harmonic distortion:** Less than 2%. **Hum & noise:** 30 db below 30% mod. **Output impedance:** (Normal) Variable to 3000 ohms; (Aux.) Variable to 4000 ohms. **Output voltage:** 1 volt nominal. **Dimensions:** 15½" W x 5¼" H x 14¼" D.

NO MONEY DOWN UP TO $300
Build your Heathkit now . . . pay later with the convenient Heath Time Payment Plan. No money down and up to 12 months to pay on orders from $25 to $300 . . . 10% down and up to 18 months on orders from $300 to $500. See Order Blank for details.

Matching 100-Watt Transistor Stereo Amplifier . . . Easily Handles Any Source, Drives Any Speaker!

CLEAN, UNCOMPROMISING POWER WITH NO FALTERING AT EITHER END OF THE RESPONSE RANGE. A full 100 watts IHF music power, 70 watts RMS from 13 to 25,000 cps at ± 1 db. Add cool, hum-free operation . . . long, unchanging life . . . transparent, "transistor sound" . . . and host of deluxe operating features. This is the modern performance of the deluxe AA-21D.

COMPLETE CONTROLS On the front panel, those you use most often . . . 5-position source switch, 5-position mode switch, dual-concentric volume control, dual-concentric bass and treble controls. Concealed but accessible behind the hinged lower panel . . . tape-monitor input switch, speaker phase reversal switch, loudness switch (converts volume control to loudness control for compensated low volume levels), plus controls for all inputs.

COMPLETE INPUTS AND OUTPUTS . . . inputs for tapehead, magnetic phono, tuner, stereo tuner, tape monitor, and auxiliary . . . outputs for 4, 8, and 16 ohm speakers plus tape recorder . . . all on the rear chassis panel.

ADVANCED CIRCUITRY. Transformerless output circuit and multiple feedback loops assure fine fidelity, low distortion, minimum phase shift. Easy to build with preamp components encapsulated in 6 epoxy-covered modules.

CHOICE OF INSTALLATION. Install the AA-21D in a wall, custom cabinet, or either Heath tan vinyl covered metal or walnut wood cabinets . . . matches the AJ-43D (opposite).

Kit AA-21D, 23 lbs., everything except a cabinet,
no money down, $13 mo. **$137.00**
Model AE-11, 8 lbs. . . . walnut wood cabinet. **$12.95**
Model AE-15, 8 lbs. . . . tan vinyl-clad steel cabinet. **$6.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-21D SPECIFICATIONS—RECOMMENDED SYSTEM MATES: Separate Speaker: AS-183, pg. 30. Speaker Systems: AS-2AU, AS-10, pg. 28. All changers & turntables, ppg. 26-27. **Power output per channel:** (Heath Rating) 35 watts/8 ohm load, 26 watts/16 ohm load, 18 watts/4 ohm load; (IHF music power output) 50 watts/8 ohm load, 34 watts/16 ohm load, 25 watts/4 ohm load @ 0.7% THD, 1 kc. **Frequency response:** ±1 db from 13 cps to 25 kc @ rated output; ±3 db from 8 cps to 40 kc @ rated output. **Harmonic distortion (At rated output):** Less than 1% @ 20 cps, 0.5% @ 1 kc, 2.0% @ 20 kc. **Intermodulation distortion (At rated output):** Less than 1%, 60 & 6,000 cps signal mixed 4:1. **Hum & noise:** Tapehead, 40 db below rated output; Mag. phono, 45 db below rated output; Aux. inputs, 60 db below rated output; Tape monitor, 7 db below rated output. **Channel separation:** 40 db min. @ 20 kc, 55 db min. @ 1 kc, 50 db min. @ 20 cps. **Input sensitivity:** (For 35 watts output per channel, 8 ohm load) Tapehead, 2 mv, Mag. phono, 3 mv; Tuner, 250 mv; FM Stereo, 250 mv; Aux., 250 mv; Tape Monitor, 0.6 V. **Input impedance:** Tapehead, 60 k ohm; Mag. phono, 30 k ohm; Tuner, 100 k ohm; FM Stereo, 100 k ohm; Aux, 100 k ohm; Tape monitor, 47 k ohm. **Outputs:** 4, 8, & 16 ohms and low impedance tape recorder outputs. **Controls:** 5-pos. Selector (dual-concentric), 5-pos. Mode switch, dual-concentric Volume, Bass & Treble controls, Tape monitor sw., Loudness sw., Phase sw., Input level controls (all inputs except Tape Head & Tape Monitor inputs), Push-Push on/off switch. **Semiconductor complement:** 26 Transistors, 10 diodes. **Power requirements:** 105-125 volts, 50-60 cycles AC. 35 watts idling, no signal; 200 watts, full power out, @ 120 volts with no load on AC receptacles. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15½" W x 5¼" H x 14" D.

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

Separates...From The Leader—Heathkit®!

AJ-33A
$94.50

AA-22
$99.95

Modern Sound And Styling . . . Old Fashioned Value . . . All-Transistor AM/FM/FM Stereo Tuner!

• 23-transistor, 8-diode circuitry • Built-in stereo demodulator • AFC for drift-free reception • Stereo indicator light • Filtered stereo outputs • Stereo phase control for maximum separation, minimum distortion • Luxurious walnut cabinet included • Matches AA-22 amplifer

WHAT DO AUDIO EXPERTS SAY ABOUT THE AJ-33A? After testing the AJ-33A, Radio-Electronics summed up its performance like this: *"Compared with other tuners, the Heath AJ-33 gives the impression that it will get any station that can possibly be pulled in. Dead fringe areas prove to be not so dead as other tuners would have us believe! And noise, which previously seemed inevitable with distant reception, is astoundingly low. The quality is indistinguishable for high quality record reproduction."*

ADVANCED FEATURES FOR VERSATILE PERFORMANCE! There's a built-in stereo demodulator; automatic stereo indicator light; AGC for even, steady volume; AFC for drift-free reception; adjustable FM squelch to nullify between-station noise when tuning; a Stereo Phase Control for maximum stereo separation, minimum distortion; filtered Left & Right channel outputs for direct beat-free stereo recording; a tuning meter, illuminated slide-rule dial, and flywheel tuning for precision station selection; and a voltage regulated power supply for high stability.

CONCEALED, EASY-TO-REACH SECONDARY CONTROLS! A hinged lower front panel conceals all secondary controls to avoid accidental system setting changes.

LUXURIOUS WALNUT CABINET INCLUDED! The clean, compact styling of the AJ-33A with pre-built walnut cabinet and extruded brushed gold-anodized aluminum front panel adds a touch of elegance to any room, enhances any decor! And with the prebuilt, prealigned FM "front-end" tuner and AM-FM I.F. circuit board, assembly is fast and simple. Order yours now!

Kit AJ-33A, 16 lbs. . . no money down, $10 mo. **$94.50**

AJ-33A SPECIFICATIONS—FM SECTION: Tuning range: 88 to 108 mc. **Intermediate frequency:** 10.7 mc. **Antenna:** 300 ohm balanced or built-in line type. **Output impedance (Emitter follower):** Variable to 3000 ohms. **Output voltage:** 1.5 volts. **Quieting sensitivity:** 2 uv for 20 db; 3 uv for 30 db. **Audio frequency response:** 20-15,000 cycles ±3 db. **Harmonic distortion:** Less than 1%. **Image rejection:** 35 db. **Capture ratio:** 3 db. **AM suppression:** 35 db. **Hum & noise:** 50 db. **MULTIPLEX SECTION: Converter bandpass:** ±¼ db 50 to 53,000 cps. **Channel separation:** 30 db from 50 to 2 kc and 25 db at 10 kc. **AM SECTION: Tuning range:** 535 to 1620 kc. **Intermediate frequency:** 455 kc. **Usable sensitivity:** 8 uv @ 1000 kc. **Antenna:** Built-in rod with provision for external straight wire. **Output voltage:** 0.25 V. with 90% modulation. **Image rejection:** 40 db @ 600 kc. **Harmonic distortion:** Less than 2% (30% mod. @ 1 mv input). **Hum & noise:** 40 db. **GENERAL SPECIFICATIONS: Tuning indicator:** Meter. **Controls:** Tuning; Right Channel level; Left Channel level; FM squelch; Stereo converter—balance, separation and phase. **Switches:** Mode, AFC, Noise filter, SCA filter, local-distance. **Transistors & diodes:** 23 transistors, 8 diodes. **Power supply:** Transformer operated, full wave rectifier. **Power requirements:** 105-125 volts, 50/60 cycles, 7 watts. **Dimensions:** 15⅝" W x 3¾" H x 11½" D.

66-Watt All-Transistor Stereo Amplifier . . . Low-Silhouette Styling, Solid State Performance, Easy-On-The-Budget Price!

• 20-transistor, 10-diode circuit • Delivers a full 66 watts of IHF Music Power • Wide-range response ±1 db, 15 cps to 30 kc • Less than 1% distortion • 5 stereo inputs for any program source • Concealed secondary controls behind hinged lower front panel • Low-silhouette styling • Handsome preassembled walnut cabinet • Perfect match to Heathkit AJ-33A Tuner

THE SOUND ONLY TRANSISTORS CAN GIVE YOU . . . FOR ONLY $99.95! Pure uncompromising sound . . . with instantaneous bursts of power as the music demands. Effortless transient response . . . freedom from microphonics . . . long, unchanging life with no tubes to deteriorate. This is solid-state performance of the AA-22. And it's yours at the typical money-saving Heathkit price.

PLENTY OF POWER! A full 40 watts continuous, 66 watts IHF music power at ±1 db from 15 to 30,000 cps into a regular 8 ohm load. More than enough for any stereo task!

HANDLES ANY PROGRAM SOURCE! 5 stereo inputs accommodate stereo mag. phono, stereo-mono tuners, stereo tape recorders and two auxiliary sources. In addition, there are outputs for 4, 8 & 16 ohm speakers, plus tape recorders. A transformerless output circuit assures greater stability and efficiency. The front panel controls include a 5-position selector switch, a 3-position mode switch, dual-tandem volume, bass and treble controls and a push-push power switch. And the hinged lower front panel conceals all secondary controls such as the input level controls, balance control, and speaker phase switch . . . no need to worry about accidental setting changes.

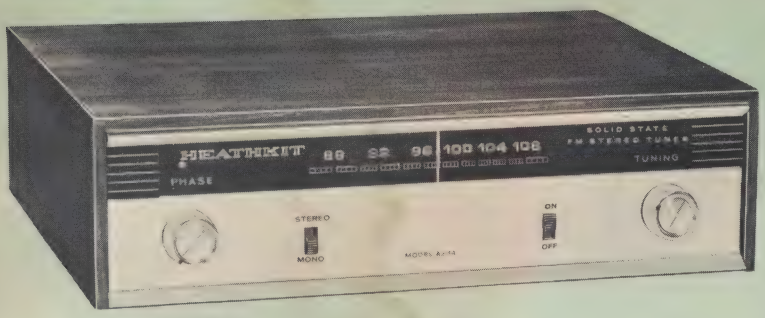
MODERN "LOW-SILHOUETTE" STYLING! Beautiful factory-assembled walnut cabinet with extruded aluminum brushed gold front panel . . . matches the AJ-33A tuner!

Kit AA-22, 22 lbs. . . no money down, $10 mo. **$99.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-22 SPECIFICATIONS—Recommended system mates: Speaker systems: AS-10 & AS-51, ppg. 28-29; separate speaker: AS-183 pg. 30; all changers, ppg. 26-27; tuner: AJ-33A, left. **Simultaneous power output per channel:** (Heath Rating) 20 watts/8 ohm load, 13 watts/16 ohm load, 9 watts/4 ohm load. (IHF music power output) 33 watts/8 ohm load; 18 watts/16 ohm load, 16 watts/4 ohm load @ 0.7% THD, 1 kc. **Power response:** ±1 db from 15 cps to 30 kc @ rated output. ±3 db from 10 cps to 60 kc @ rated output. **Harmonic distortion:** (at rated output) less than 1% @ 20 cps. 0.3% at 1 kc, 1% @ 20 kc. **Intermodulation distortion:** (at rated output). Less than 1%, 60 and 6,000 cps signal mixed 4:1. **Hum and noise:** Mag phono, 50 db below rated output. Aux inputs 65 db below rated output. **Channel separation:** 40 db. @ 20 cps, 60 db @ 1 kc; 40 db @ 20 kc. **Input sensitivity:** (for 20 watts output per channel, 8-ohm load), Mag phono, 6 mv; Tuner, 250 mv; Tape Recorder, 250 mv; Aux 1, 250 mv; Aux 2, 250 mv. **Input impedance:** Mag phono, 35 K ohm; Tuner, 100 K ohm; Tape Recorder, 100 K ohm; Aux 1, 100 K ohm; Aux 2, 100 K ohm. **Outputs:** 4, 8 and 16 ohm and tape recorder outputs. **Controls:** 5-position selector switch, 3-position mode switch, dual tandem volume, bass and treble controls, phase switch, input level controls, push-on push-off switch. **Semi-conductor complement:** 20 transistors, 10 diodes. **Power requirements:** 105-125 volts, 50-60 cycles AC, 25 watts idling, no signal; 105 watts, full power output @ 120 volts with no load on AC receptacles. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15⅝" W x 3¾" H x 11⅜" D (allow 1½" extra for rear projections).

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

Lowest Cost Transistor Stereo



AJ-14
$49.95
(less cabinet)

A Word About The AJ-14 Tuner From Owner John K. Cryer, Little Rock, Arkansas

"Why don't you tell people the truth about your Model AJ-14 FM Stereo Tuner? The quick construction time, fabulous performance, and low price have left me at a loss of words to describe my satisfaction."

• 14-transistor, 5 diode circuit for cool, instant operation, and the natural beauty of transistor sound • Stereo phase control to maximize stereo separation, minimize distortion • 4-stage IF section insures high sensitivity & selectivity • Filtered outputs for direct "beat-free" stereo recording • Automatic stereo indicator light • Prealigned, preassembled "front-end" tuner & one-circuit board for fast, simple assembly • Install any of 3 ways . . . wall, custom or either Heath cabinet

How To Get 1966 Performance At 1949 Prices . . . Build This New Solid-State FM/FM Stereo Tuner for Just $49.95

Why Pay More . . . when you can own this all-transistor FM/FM stereo tuner that performs like expensive factory-built models, yet costs so little! Boasts an IHF sensitivity of 5 mv, distortion of less than 1%, and a stereo response of 50 to 15,000 cps. And you'll like the way it goes together . . . only one circuit board to wire and some parts to mount on the chassis . . . takes from 4 to 6 hours! The "front-end" is preassembled and aligned at the factory to assure the best performance, and to help speed assembly.

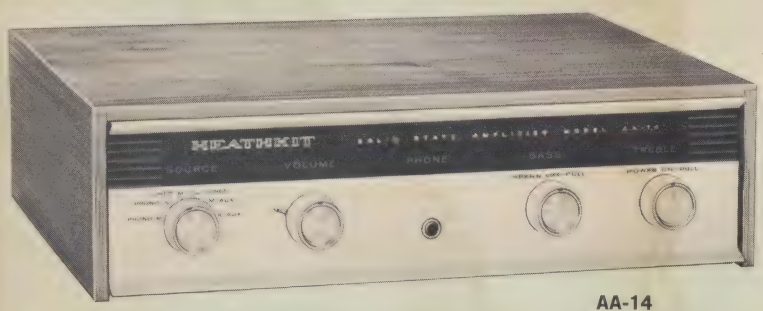
Modern Solid-State Circuitry! Delivers a clean sound, without microphonics or heat . . . traits no tube tuner can duplicate. 14 transistors, 5 diodes . . . 3 transistors in the "front-end" tuning section . . . 4 transistors in the 4-stage I.F. section . . . to produce sensitivity and selectivity comparable to much more expensive tuners. Solid-state transformer-operated power supply. Plus filtered outputs for clean tape recordings.

Easy To Operate—Just 4 Controls! An On-Off switch, flywheel Tuning knob, Mono-Stereo switch, and Stereo Phase Control. And you'll like the convenience of an automatic stereo indicator light, edge-lighted slide-rule dial, and external antenna connectors.

Versatile Installation. Its compact 11¾" W x 2⅞" H x 9¾" D size fits almost anywhere. And the extruded anodized aluminum front panel looks great mounted in a wall, your own cabinet, or either Heath cabinet (below).

Kit AJ-14, 6 lbs. . .(less cabinet for custom mounting).
no money down, $5 mo. **$49.95**
Model AE-35, 4 lbs., beige metal cabinet. **$3.50**
Model AE-25, 4 lbs. . .genuine walnut veneer cabinet. **$7.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AJ-14 SPECIFICATIONS (RATED IHF STANDARDS)—Tuning range: 88 to 108 mc. **Antenna input impedance:** 300 ohm, balanced input. **Sensitivity (IHF):** 5 microvolts. **Intermediate frequency:** 10.7 mc. **Audio frequency response (IHF):** —3 db to +0 db. (20 to 15,000 cps). **Hum and noise (IHF):** —50 db. **Output impedance:** 20 K ohm. **Output voltage:** 0.7 volt with a 1,000 microvolt input signal. 400 cps with 100% modulation. **Harmonic distortion (IHF):** 1% or less. **Image ratio (IHF):** —45 db. **Capture ratio (IHF):** 3 db. **IF rejection (IHF):** —80 db. **AFC correction:** 150 kc per volt. **AM suppression (IHF):** —40 db. **Channel separation:** 30 db or more at 1,000 cps. (Channel separation is measured using a 98 mc, 1,000 microvolt input stereo signal that is 100% modulated.) **Dimensions:** With Walnut Cabinet 12½" W x 3½" H x 9⅝" D. **Custom mounting dimensions:** Horizontal or vertical; cutout required 11¾" x 2⅞", depth required from front of mounting surface 9¾".



AA-14
$59.95
(less cabinet)

AA-14 SPECIFICATIONS—Recommended system mates: All speakers & speaker systems, ppg. 28, 29, 30 except AS-2A & AS-2U, all changes & turntables, ppg. 26 & 27. **Continuous power output:** 10 watts each channel—20 watts total. **Music power output (IHF):** 15 watts per channel. **Output impedance:** 4 through 16 ohm. **Damping factor:** 50 or better. **Hum and noise:** Phono: —60 db; Tuner: —70 db; Auxiliary: —63 db. **Frequency response:** 15 to 50,000 cps ±1 db; 6 to 100,000 cps ±3 db. **Power response:** 15 to 50,000 cps ±1 db; 7 to 90,000 cps ±3 db. **Input sensitivity:** Phono: 4.5 mv; Tuner: 300 mv; Auxiliary: 300 mv. **Input impedance:** Phono: 47K ohm; Tuner: 180K ohm; Auxiliary: 180K ohm. **Channel separation:** 45db or better. **Total harmonic distortion (at Full Output):** .5% or less @ 1000 cps, 1% or less @ 20 & 20,000 cps. **Intermodulation distortion (at Rated Output):** Less than 1% (60 and 6,000 cps, 4:1). **Phono equalization:** RIAA. **Front panel:** 6-Position Source Switch: Mono phono; Stereo phono; Mono tuner; Stereo tuner: Mono Auxiliary; Stereo Auxiliary; Volume Control; Bass Control; Treble Control; Phone Jack; Power Switch; Speaker Switch. **Rear panel:** Fuse, AC Power Socket; Switched & Unswitched. Speaker Terminal Block: One Left & One Right Speaker. Ground Terminal: 1. Triple Phono Input Sockets. **Power requirements:** 105-125 volts, 50/60 cps: 20 watts idling; 60 watts full output; (No load on AC power socket). **Dimensions:** With walnut cabinet 12½" W x 3½" H x 9⅝" D. **Custom mounting dimensions:** Horizontal or vertical; cutout required 11¾" x 2⅞"; depth required from front of mounting surface 9¾".

Add This Low Cost 30-Watt Transistor Stereo Amplifier To Your Music System—Costs Just $59.95, Assembles In Just 10 Hours

• 17 transistors, 6 diodes • ±1 db, 15 to 50,000 cps at 10 watts per channel continuous power (20 watts total) or 15 watts per channel IHF Music Power (30 watts total) • Concentric, clutched volume control • Tandem bass and treble controls • Edge-lighted control dial • Front panel stereo headphone jack

Compares To Amplifiers Selling for $100 . . . that's the new AA-14 solid-state 30-Watt stereo amplifier . . . with the ability to handle virtually any source, plus the cool instant operation and clean natural sound of all-transistor circuitry. Compare!

Solid-State Circuitry. Two identical, but separate, preamplifiers and power amplifiers using 17 transistors and 6 diodes produce 30 watts of hi-fi rated power, ±1 db, throughout the extremely wide range of 15 to 50,000 cps . . . remarkable in any amplifier, unheard of until now in an amplifier of this low price. New transformerless complementary output to insure extended response with minimum phase shift and lowest distortion. Power supply is regulated within 10% . . . rarely found even in more expensive amplifiers.

Professional Features. Six-position source switch with stereo and mono positions; concentric clutched volume control for independent adjustment of each channel if necessary for balance; full-range tandem controls for bass and treble boost and cut; edge-lighted dial indicating all functions; front panel mounted stereo headphone jack; off switch for speakers, allowing private headphone listening.

Smart, Compact Styling. At last, truly bookshelf size . . . just 9¾" D x 2⅞" H x 11¾" W. Handsome anodized front panel plus your choice of custom mounting or either of the Heath cabinets below.

Easy To Build, Easy To Own. Fast circuit board construction . . . pack to performance in 10 hours or less!

Kit AA-14, 11 lbs., less cab. for custom mtg., no money dn., $6 mo. **$59.95**
Model AE-35, 4 lbs. . .beige metal cabinet. **$3.50**
Model AE-25, 4 lbs. . .genuine walnut veneer cabinet. **$7.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

Deluxe "Tube-Type" Stereo

HEATHKIT®

AA-100
$84.95

- Hi-Fi rated at 50 watts (25 watts per channel)
- 5 stereo inputs
- Versatile controls
- Mixed channel center speaker output
- Separate monophonic phono input
- Easy circuit board assembly
- Matches the AJ-41 tuner in styling and performance

FREE . . .

With Matching Pair!

An 8-range Heathkit soldering iron (see pg. 17) worth $14.95 is yours FREE . . . when you order both the AA-100 amplifier & matching AJ-41 tuner! Offer expires May 31, 1966.

AJ-41
$112.50

- Built-in FM multiplex adapter
- Broadband circuitry for full fidelity
- Automatic FM Stereo indicator light
- Adjustable Automatic Frequency Control for locked-in reception
- Stereo phase control for maximum separation and lowest distortion
- Adjustable FM squelch circuit for low noise between stations
- Preassembled tuning unit, prealigned coils

Complete Versatility For Command Of Every Stereo Function . . . 60-Watt Stereo Amplifier!

Easily Drives Any System . . . with 50 watts RMS, 60 watts IHF music power from 30 to 15,000 cps at ±1 db. 5 stereo inputs handle mag. phono, FM and AM tuners, tape, and 2 auxiliary sources. In addition, there are outputs for 4, 8 & 16 ohm speakers; "mixed-channel" speaker output for center "fill-in"; preamp and power amp input level controls; hum controls; mode selector; speaker-phase reversal switch; and balance & separation controls. Tape playback heads connect directly without external amplification or equalization. Order with matching AJ-41 tuner and get a $14.95 soldering iron FREE!

Kit AA-100, 34 lbs., no money dn., $9 mo. **$84.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-100 SPECIFICATIONS—Recommended System Mates: Separate Speakers, AS-183, pg. 30; Speaker Systems, AS-10, AS-51, pg. 28 & 29; all changers & turntables, ppg. 26 & 27; Tuner, AJ-41 opposite. **Channels:** 2. **Power output:** 50 watts (25 w. per channel) Heath Hi-Fi Rating: 60 watts (30 w. per channel) IHF Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 30 cps to 15 kc at 25 watts output per channel. **Harmonic distortion:** Less than 0.5% at 25 watts, 1 kc. Less than 2% at 25 watts, 30-15,000 cps (each channel). **Intermodulation distortion:** Less than 1% at 25 watts, 60 and 6,000 cps signals mixed 4:1 (each channel). **Hum and noise:** Mag phono, 55 db below 25 watts output at 6 mv sensitivity. Tape Head, 35 db below 25 watts output. Tuner and aux. inputs 70 db below 25 watts output. **Channel separation:** 42 db min. at 1 kc. **Input sensitivity:** For 25 watts output per channel; mono mag. phono, 1.5 mv; stereo mag. phono, 1.5 mv; tape head, 1 mv; tuner, 0.2v.; aux. 1 & 2, 0.2v. **Outputs:** 4, 8 and 16 ohms; cathode follower tape recorder outputs. **Dimensions:** 5" H x 15¼" W x 13½" D. (allow 1" for cables at rear).

Matching AM/FM/FM Stereo Tuner . . . Satisfies Any Listening Wish!

Beautifully Clear And Quiet FM . . . maximum fidelity AM . . . or the enveloping realism of FM stereo . . . all at your fingertips when you own the AJ-41. Other features include individual AM & FM tuning meters; lighted slide-rule dial & flywheel tuning for precision station selection; cathode follower outputs to minimize hum & high frequency losses; a fidelity switch for choice of normal or maximum AM; and handsome, tan vinyl-clad steel cabinet.

Kit AJ-41, 26 lbs., no money dn., $11 mo. **$112.50**

AJ-41 SPECIFICATIONS—FM: Tuning range: 88 mc to 108 mc. **I. F. frequency:** 10.7 mc. **Frequency response:** ±2 db, 20 to 20,000 cps. **Antenna:** 300 ohm balanced (for internal or local reception). **Output voltage:** Nominal .5 volts (with 3 uv 30% modulation in). **Quieting sensitivity:** 2 uv for 20 db of quieting, 20 uv for full quieting (40 db). **Maximum deviation sensitivity:** 5 uv; (400 cycle 100% modulation). **Deviation sensitivity:** 20 kc (1100 uv in). **Harmonic distortion:** Less than 1% (1100 uv 400 cycle 100% modulation). **Image ratio:** 40 db. **AFC correction factor:** 12 db. **Amplitude modulation suppression:** 25 db. **Hum & Noise:** 40 db below 30% modulation (20 uv in). **SPECIFICATIONS MULTIPLEX—Audio frequency response:** ±2 db, 50 to 15,000 cps. **Sub-carrier bandpass:** ±3 db 23,000 to 53,000 cps. **Channel separation:** 30 db. **Hum & Noise:** —55 db (relative to 1 volt rms output.) **Output impedance:** Cathode follower, variable to 4,000 ohms (each channel). **SPECIFICATIONS AM—Sensitivity, narrow bandwidth position:** 1400 kc, 3 uv; 1000 kc, 4 uv; 600 kc, 8 uv (standard IRE dummy antenna, .1 volt RMS reference output). **Sensitivity change, narrow to broad position:**—5 db. **I.F. bandwidth, narrow:** 14 kc, 6 db down. **Broad:** 20 kc, 6 db down. **Image ratio:** 1400 kc 50 db; 600 kc 75 db. **Harmonic distortion:** Less than 1%. **Hum & noise:** 35 db below 30% modulation (1000 kc unmodulated with 100 uv in). **I. F. rejection ratio:** 1400 kc 42 db; 600 kc 38 db. **Power supply:** Transformer operated, 117 v., 50-60 cycle, 100 watts. **Dimensions:** 5¼" H x 15½" W x 14¼" D.

AA-151
$59.95

FREE . . .

With Matching Pair!

An 8-range Heathkit soldering iron (see pg. 17) worth $14.95 is yours FREE . . . when you order both the AA-151 amplifier & matching AJ-32 tuner! Offer expires May 31, 1966.

AJ-32
$84.95

32-Watt Stereo Amplifier . . . Famous For Its Performance & Value!

- Two hi-fi rated 14-watt channels, preamps and power amps
- Operates stereo or monophonic
- Accepts four stereo music sources
- Front panel controls
- Patented Heath Ultra-Linear® circuit
- Matches Heathkit AJ-12 & AJ-32 Tuners

Kit AA-151, 30 lbs., no money dn., $6 mo. **$59.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-151 SPECIFICATIONS—Recommended System Mates: Separate Speakers, AS-163, pg. 30; Speaker Systems, AS-51, AS-10 pg. 28 & 29; all changers & turntables, ppg. 26 & 27; Tuner, AJ-32 opposite. **Channels:** 2. **Power output:** 28 watts (14 w. per channel) Heath Hi-Fi Rating: 32 watts (16 w. per channel) IHF Music Power Output (0.7% THD, 1 kc). **Power response:** ±1 db from 20 cps to 20 kc at 14 watts output per channel. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 14 watts output per channel. **Intermodulation distortion:** Less than 2% at 14 watts output per channel using 60 cps and 6 kc signal mixed 4:1. **Hum and noise:** Mag. phono input, 55 db below 14 watts; Tuner and crystal phono 65 db below 14 watts. **Channel separation:** Better than 45 db. **Input sensitivity:** For 14 watt output each channel (tone controls in "Flat" position); mag. phono, 0.004 volts at 1 kc; crystal phono, 0.2 volts; tuner and aux., 0.2 volts. **Outputs:** 4, 8 and 16 ohms. **Dimensions:** 15¾" W x 5¼" H x 11" D.

Matching AM/FM Stereo Tuner . . . Attractive In Styling & Price!

- Built-in multiplex converter
- FM Stereo indicator light
- Variable AFC for drift-free reception
- 2 bar-type "Eye" tuning indicators
- Stereo Phase control
- Filtered stereo outputs
- Styling matches AA-151 amplifier

Kit AJ-32, AM-FM Stereo Tuner, 23 lbs., no money dn., $9 mo. . **$84.95**

AJ-32 SPECIFICATIONS—AM Section: Tuning range: 550 kc-1600 kc. **Usable sensitivity** (normal position): 1400 kc—10 microvolts (20 db of quieting); 1000 kc—15 microvolts (20 db of quieting); 600 kc—40 microvolts (20 db of quieting). **FM Section: Tuning range:** 88 mc-108 mc. **Antenna:** Balanced input for external 300 ohm antenna. Internal line antenna. **AM suppression:** —27 db. **Quieting sensitivity:** 20 db—2½ microvolts; 30 db—3½ microvolts; 48 db—30 microvolts (max. quieting). **FM Stereo Converter Section: Audio frequency response:** ±2 db from 50 to 15,000 cps. **Subcarrier bandpass:** ±3 db from 23,000 to 53,000 cps. **Channel separation:** 30 db or more at 1 kc; 25 db or more at 10 kc. **Output impedance** (cathode follower): Variable to 4000 ohm, each channel. **Size:** 5¼" H x 15¾" W x 11" D.

Money-Saving "Tube-Type" Stereo/Hi-Fi!

AJ-13 $47.00

Ⓐ Versatile FM/FM Stereo Tuner . . . Simple Operation, Lowest Cost

• Built-in FM stereo circuitry • FM stereo indicator light • Automatic Frequency Control • Pre-assembled, prealigned "front-end" & point-to-point wiring for fast, easy construction • New mocha brown, beige & black color styling . . . matches AA-32 Amplifier below • Filtered outputs for stereo tape recording • Lighted slide-rule dial, flywheel tuning

Kit AJ-13, 14 lbs. . . no money dn., $5 mo. **$47.00**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AJ-13 SPECIFICATIONS—Tuning range: 88 to 108 mc. **Intermediate frequency:** 10.7 mc. **Quieting sensitivity:** 2½ uv for 20 db of quieting; 3½ uv for 30 db of quieting. **Audio frequency response:** Mono—±1 db from 20 to 20,000 cps. Stereo—± 2 db from 50 to 15,000 cps. **Antenna:** Balanced input for external 300 ohm antenna. **Channel separation:** 25 db or more at 1000 cps. **Front panel controls:** Tuning; selector switch, power off-FM-stereo; AFC switch, off-on. **Dimensions:** Overall: 13½" W x 4-11/16" H x 9½" D.

AA-32 $39.95

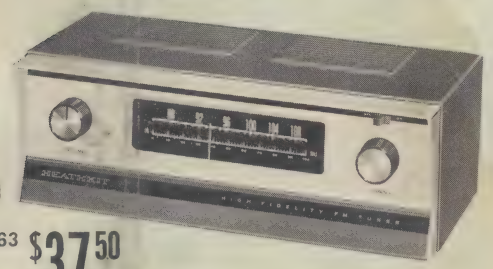
Ⓑ Fine Performance At An Economy Price . . . Matching 20-Watt Stereo Amplifier

• Four stereo inputs . . . magnetic & ceramic cartridges, tuner & auxiliary • Furnishes 16 watts of continuous stereo power—IHF Music power output of 20 watts • Refreshingly styled in mocha brown and beige with black trim accents • Full-range controls . . . found only on more expensive equipment • Easy to build . . . goes from parts to performance in just a few evenings • Two push-pull output stages plus two 4-stage preamps

Kit AA-32, 16 lbs. . . no money dn., $5 mo. **$39.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-32 SPECIFICATIONS—Recommended System Mates: Speaker; AS-133, pg. 30. Speaker systems; AS-22, AS-81, pg. 28. All changers & turntables, pgs. 26 & 27. **Simultaneous power output per channel:** 8 watts (16 watts total); IHF Music Power Output per channel: 10 watts (20 watts total). **Frequency response:** ±1 db from 30 cps to 30,000 cps at rated output. **Harmonic distortion:** (at rated output) 2% @ 30 cps, 0.7% @ 1000 cps, 2% @ 15,000 cps. **Intermodulation distortion:** (at rated output) Less than 3% using 60 and 6000 cps mixed 4:1. **Dimensions:** 13½" W x 4-11/16" H x 9¼" D.



AJ-63 $37.50

Ⓒ Low Cost FM Tuner . . . Simple To Build, Converts To Stereo!

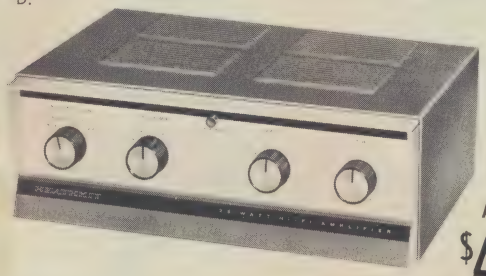
• Broad-band circuitry, receives stereo with AC-11 Multiplex Converter (below) • Mocha brown & beige color styling with black trim • 5 tube circuit—9 tube function • Automatic Frequency Control for drift-free reception • Easy to build with factory assembled "front-end" tuner, prealigned IF transformers & encapsulated circuit module • Matches AA-13 & AA-23 Amplifiers

Kit AJ-63, 10 lbs., no money dn., $5 mo. **$37.50**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AJ-63 SPECIFICATIONS—Tuning range: 88 to 108 mc. **Quieting sensitivity:** 2.5 uv for 20 db of quieting; 3.5 uv for 30 db of quieting; 25 uv for maximum quieting (38 db). **IF frequency:** 10.7 mc. **Image ratio:** 40 db. **AFC correction factor:** 75 kc per volt. **AM suppression:** 25 db. **Frequency response:** ±2 db, 20-20,000 cps. **Harmonic distortion:** Less than 1.5%, 1100 uv, 400 cycles 100% modulation. **Intermodulation distortion:** Less than 1%, 60 cycles and 6 kc, mixed 4:1; 1100 uv, 30% modulation. **Antenna:** 300 ohms unbalanced. **Output impedance:** 600 ohms (cathode follower). **Output voltage:** Nominal .5 volt (with 30% modulation, 20 uv signal). **Power requirements:** 105-125 volts, 50/60 cycles AC at 30 watts. **Overall dimensions:** 4-11/16" H x 13⅜" W x 7" D.

AA-13 $29.95



AA-23 $42.95

AC-11A $23.50

Ⓓ 16-Watt Mono Amplifier . . . Ideal For That Extra Music System!

• New mocha brown & beige color styling with black trim • Patented Heath Ultra-Linear® circuit • Hi-Fi rated 14-watt output • 30 to 15,000 cps response ±1 db at full rated output • Separate bass & treble controls • Three inputs for any program source • Matches AJ-53 & AJ-63 tuners

Kit AA-13, 17 lbs. . . no money dn., $5 mo. **$29.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-13 SPECIFICATIONS—Recommended System Mates: Speaker: AS-133, pg. 30; Speaker System: AS-22, AS-51. pg. 28; all changers & turntables ppg. 26 & 27. **Power output:** 14 watts Heath Hi-Fi Rating; 16 watts IHF Music Power Output (2% THD, 1 kc). **Frequency response:** ±1 db 30-15,000 cps, 14 watts output. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 14 watts output. **Intermodulation distortion:** 2% or less at 14 watts output using 60 and 6000 cps signals, 4:1. **Hum & noise:** Mag. phono input, 50 db below 14 watts; Tuner and crystal phono, 60 db below 14 watts. **Input sensitivity:** For 14 watts output; mag phono, 0.004 v at 1 kc; crystal phono, 0.2 v; tuner 0.25 v with tone controls flat. **Output:** 4, 8 and 16 ohms. **Damping factor:** 10:1. **Controls:** 3-position function selector switch, bass and treble tone controls, volume control. **Power requirements:** 117 v, 50-60 cycles, 55 watts. **Dimensions:** 4-15/16" H x 13½" W x 10½" D.

Ⓔ 30-Watt Mono Amplifier . . . Compact Size, King-Size Performance

• Hi-Fi rated at 25 watts continuous power, 30 watts IHF music power rating • New mocha brown & beige color styling with black trim • Four front-panel selected inputs • ±1 db from 30 to 15,000 cps power response • Separate bass & treble controls • Bookshelf size for limited space installations • Easy to build • Matches AJ-63 & AJ-53 tuners

Kit AA-23, 20 lbs. . . no money dn., $5 mo. **$42.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-23 SPECIFICATIONS—Recommended System Mates: Speakers: AS-183, AS-163, pg. 30; Speaker Systems: AS-22, AS-51, pg. 28; all changers & turntables, ppg. 26 & 27. **Power output:** 25 watts Heath hi-fi rating; 30 watts IHF music power rating (0.7% THD @ 1 kc). **Frequency response:** ±1 db, 30 cps to 15 kc, at 25 watts output. **Harmonic distortion:** Less than 2%, 30 cps to 15 kc at 25 watts output, and less than 0.7% at 1 kc at 25 watts output. **Intermodulation distortion:** Less than 2% at 25 watts using 60 cps and 6000 cps signals 4:1. **Hum & noise:** Microphone, —60 db or better; Mag. Phono, —53 db or better; Xtal Phono, —55 db or better; Auxiliary, —60 db or better. **Input sensitivity:** For 25 watts output with tone controls flat; Microphone, 9 mv; Mag. phono, 5 mv (at 1 kc); Xtal Phono, 120 mv; Auxiliary, 200 mv. **Outputs:** 4, 8, and 16 ohms. **Damping factor:** 9. **Controls:** 4-position selector switch, volume control, bass control and treble control with on/off switch. **Power requirements:** 105-125 volts, 50-60 cps, 120-135 watts. **Power outlets:** 1 AC receptacle, unswitched. **Indicator:** Neon pilot light. **Dimensions:** 13¾" W x 4-15/16" H x 9½" D.

Ⓕ Add Stereo Realism With A Multiplex Adapter

• Use with any FM tuner having multiplex output • Compact . . . fits anywhere • Styled to match Heathkit tuners • Built-in power supply • Easy to build . . . easy to operate

Features Built-In Power Supply with silicon rectifier, 3 tubes, & prealigned coils. Balanced diode detector assures low distortion. Convert now . . . order yours today!

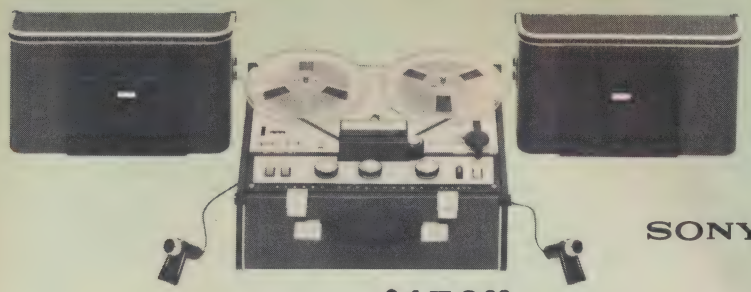
Kit AC-11A, black, 4 lbs. **$23.50**

Kit AC-11B, tan, 5 lbs. **$23.50**

AC-11 SPECIFICATIONS—Audio frequency response: ±2 db 50 to 15,000 cps. **Sub-carrier bandpass:** ±4 db 23,000 to 53,000 cps. **Channel separation:** 30 db. **Hum and noise:** —55 db (relative to 1 volt rms output). **Input impedance:** 470 K ohms. **Output impedance:** 3000 ohms each channel (cathode follower). **Input:** MULTIPLEX (from tuner). **Input signal voltage:** .4 volt minimum (from multiplex output of FM tuner). **Outputs:** LEFT CHANNEL; RIGHT CHANNEL. **Switch and controls:** OFF-ON switch; CHANNEL SEPARATION control; LEFT CHANNEL LEVEL control; RIGHT CHANNEL LEVEL control. **Power requirements:** 117 volts AC-50/60 cps, 12 watts. **Size:** 3⅜" H x 3⅜" W x 9⅞" D.

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

Sony Sterecorders & Heathkit® Stereo Separates!



GDP-184B **$179.00**

SONY SUPERSCOPE

GDP-174A
$135.00

Sony 200-B Sterecorder . . . Detachable Speakers Form Lid For Suitcase Portability, Separate For Best Stereo!

• 4-track stereo & mono record & playback at 7½ & 3¾ ips • Full-range stereo speaker system • Sound-on-sound recording capability • Dynamically balanced capstan flywheel • Two V.U. meters • Automatic Tape Lifter • Pause control and digital tape counter • Full 7" reel capacity • FM stereo inputs • Built-in Stereo preamplifiers & power amplifiers • Two Sony F-96 dynamic microphones

Model GDP-184B, 53 lbs. . . No money down, $17 mo. **$179.00**

GDP-184B SPECIFICATIONS—Power requirements: 70 watts 117 volts, 60 cycles (50 cycles optional). **Tape speeds:** 7½ and 3¾ ips. **Frequency response:** 50-14,000 cps @ 7½ ips; 50-10,000 cps @ 3¾ ips. **Flutter & wow:** Less than 0.19% @ 7½ ips; less than 0.25% @ 3¾ ips. **Signal to noise ratio:** Better than 45 db. **Level indication:** 2 VU meters. **Input provision:** 2 microphone; 2 high level. **Output provisions:** Pre-amp. Two 600 ohm high level; Power amp. Two 8 ohm external speakers & stereo headsets. **Transistor & tube complement:** (2) 2SD64, (1) 6267, (3) 30A5, (3) diodes. **Dimensions:** 15" W x 16" D x 9" H.

New Sony 250-A All-Transistor Sterecorder . . . Use Horizontally Or Vertically!

• 4 track stereo & mono record & playback at 7½ & 3¾ ips • All-transistor for instant operation, compact size • Operates in both horizontal or vertical positions • Two V.U. meters • Automatically shuts itself off at end of reel • Dynamically balanced capstan flywheel • Automatic tape lifter • Simple single-knob operation for all functions • Attractive walnut cabinet base

Model GDP-174A, 23 lbs. . . no money dn., $13 mo. **$135.00**

GDP-174A SPECIFICATIONS—Power requirements: 115 volts, 60 cycles (50 cycles optional). **Tape speeds:** 7½ and 3¾ ips. **Flutter and wow:** 0.19% @ 7½ ips; 0.25% @ 3¾ ips. **Frequency response:** 50-14,000 cps @ 7½ ips. **Signal to noise ratio:** 50 db or more. **Level indication:** 2 VU meters. **Inputs:** Microphone and line per channel. **Outputs:** High level line per channel. **Dimensions:** 14½" W x 6½" D x 9" H.

Ideal Control Center For Any System . . . Low-Cost Stereo Preamplifier!

AA-141A **$34.95**

• 4 inputs for each channel • 6-position function selector for stereo or mono • Cathode follower outputs for low line loss, less distortion • Built-in power supply permits use with any basic power amplifier • Baxandall-type tone controls for true, natural sound • Frequency response ±1 db from 20 to 20,000 cps • Low impedance outputs for stereo tape recording

Kit AA-141A, 11 lbs. . . no money down, $5 mo. **$34.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-141A SPECIFICATIONS—Channels: 2. **Inputs (each channel):** Mag Phono, Xtal Phono, Aux. 1, Aux. 2. **Outputs (each channel):** Power amplifier, tape recorder. **Frequency response:** (with the volume control at maximum and the Bass and Treble controls set approximately to the mid position): ±1 db from 20 to 20,000 cps. **Harmonic distortion:** (at 2.5 volts rms output, using AUX 1 or 2 input): .1% or less. **Intermediate distortion:** (at 2.5 volts equivalent rms output using AUX 1 or 2 inputs): .1% or less. **Channel separation:** 45 db or better 20 to 20,000 cps. **Hum and noise (below 2.5 volt RMS):** Mag Phono, 55 db (or better); Xtal Phono, 65 db (or better); Aux 1 and 2, 65 db (or better). **Dimensions:** 15¾" W x 5¼" H x 7⅜₁₆" D (overall).

Less Than A Dollar A Watt . . . 98-Watt Stereo Power Amplifier!

AA-121 **$79.95**

• Furnishes 98 watts IHF music power, or 80 watts RMS power at ±½ db from 20 to 20,000 cps • Heath patented Ultra-Linear® ouput circuit • "Bias-Bal" output balancing circuit • Mixed-channel center speaker output • Individual amplifier gain controls • Ideal for use with AA-141A preamplifier

Kit AA-121, 39 lbs. . . no money down, $8 mo. **$79.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-121 SPECIFICATIONS—Recommended System Mates: Speakers: AS-2, AS-2A, AS-10, pg. 31; AS-15, AS-21, pg. 30. **Channels:** 2. **Power output:** 80 watts (40 w. per channel). Heath Hi-Fi Rating; 98 watts (49 w. per channel). IHF Music Power Output (0.7% THD, 1 kc.). **Power response:** ±0.5 db. 20-20,000 cps; at 40 watts output per channel. **Harmonic distortion:** 1.5% or less, 20-20,000 cps at 40 watts output per channel. **Intermodulation distortion:** 0.5% or less at 40 watts output per channel, 60 and 6000 cps mixed 4:1. **Hum and noise:** 85 db below 40 watts output. **Channel separation:** 70 db or better at 1 kc. **Outputs:** 4, 8, 16, and 32 ohms per channel; center speaker terminals can be used with 4, 8 or 16 ohm speakers. **Dimensions:** 7½" H x 15" W x 11" D.

FIND PARCEL POST ZONE ON MAP THEN REFER TO THIS RATE TABLE

Postal Regulations . . . limit parcel post shipments to 20 pounds to zones 3 to 8, and 40 pounds to zones 1 and 2. EXCEPTION: Shipments up to 70 pounds will still be accepted to RFD addresses, and to APO numbers.

Ship. Wt.	Zone 1&2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Ship. Wt.	Zone 1&2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
to 2 lbs.	$.40	$.42	$.46	$.52	$.59	$.66	$.72	12 lbs.	.93	1.06	1.26	1.58	1.90	2.29	2.66
3 lbs.	.46	.49	.55	.64	.73	.83	.93	13 lbs.	.98	1.12	1.33	1.69	2.02	2.44	2.83
4 lbs.	.51	.55	.64	.75	.88	1.01	1.13	14 lbs.	1.03	1.18	1.41	1.79	2.14	2.60	3.01
5 lbs.	.57	.62	.72	.87	1.02	1.18	1.34	15 lbs.	1.08	1.24	1.48	1.89	2.25	2.75	3.18
6 lbs.	.62	.68	.80	.97	1.15	1.34	1.53	16 lbs.	1.13	1.30	1.56	1.99	2.37	2.90	3.36
7 lbs.	.68	.75	.88	1.07	1.28	1.50	1.73	17 lbs.	1.18	1.36	1.64	2.09	2.49	3.06	3.53
8 lbs.	.73	.81	.95	1.18	1.41	1.66	1.92	18 lbs.	1.23	1.42	1.71	2.20	2.61	3.21	3.71
9 lbs.	.78	.87	1.03	1.28	1.53	1.82	2.12	19 lbs.	1.28	1.48	1.79	2.30	2.73	3.36	3.88
10 lbs.	.83	.93	1.10	1.38	1.66	1.98	2.31	20 lbs.	1.32	1.54	1.86	2.40	2.85	3.51	4.06
11 lbs.	.88	1.00	1.18	1.48	1.78	2.14	2.48								

IMPORTANT: Parcel post rate changes enacted April, 1964 are reflected in this table.

INCLUDE MONEY FOR POSTAGE with your orders as we must pay postage on parcel post packages before we can send your merchandise.

Famous-Name Turntables...Choose

ADP-104
$84.51
(with 1c cartridge)

Garrard Type A70 Automatic Turntable!

• Exclusive pusher platform offers automatic play without compromise . . . safest automatic record principle ever developed • Completely new dynamically balanced tone arm for improved tracking capability & resistance to external shock • New adjustable stylus pressure & tracking force • Full-sized, heavy-balanced cast "sandwich" turntable • New adjustable bias compensator • New lightweight shell • New ultra-sensitive "frictionless" Delrin® trip assembly • Double-shielded 4-pole shaded motor • 4 speeds, automatic or manual

ADP-104, 23 lbs., turntable . . . no money dn., $9 mo. **$84.50**
ADP-104, 24 lbs., turntable with choice of 1c offer cartridge below (specify by model no.) . . . no money dn., $9 mo. . . **$84.51**
ADA-61-1, 1 lb., Garrard LRS3 45 rpm spindle. **$3.80**
ADA-63-3, 4 lbs., walnut base, 16-7/16" W x 13-11/16" D x 3" H. **$5.50**

ADP-104 SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45 & 78 rpm. **Motor:** 4-pole shaded, double shielded. **Tracking:** Will track with "professional" model cartridges. **Color:** Iridescent charcoal gray and chrome. **Wiring:** Stereo, 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** Line cord and 2 audio. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** Requires mounting space 16" W., 13¼" D., 6" above and 2⅞" below top of motor board.

ADP-114
$59.51
(with 1c cartridge)

Garrard AT60 Automatic Turntable!

• Tubular tone arm is counterweight-adjusted & dynamically balanced with a built-in stylus gauge • Automatic intermix record operation • New automatic bias compensator tracks lightest & most compliant cartridges accurately and without distortion • Heavy cast, oversize turntable . . . dynamically balanced and non-magnetic • Lightweight cut-away shell accepts all cartridges • 4 speeds, automatic or manual

ADP-114, 15 lbs., turntable . . . no money dn., $6 mo. **$59.50**
ADP-114, 15 lbs., turntable and choice of any 1c offer cartridge below (specify by model no.) . . . no money dn., $6 mo. **$59.51**
ADA-114-1, 1 lb. . . Garrard LRS10 45 rpm spindle. **$3.80**
ADA-53W, 3 lbs. . . walnut finish base, 14⅝" W x 12¾" D x 3" H. **$4.95**

ADP-114 SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45 & 78 rpm. **Motor:** 4-pole shaded, double shielded. **Tracking:** Will track all cartridges, including high compliance models. **Color:** Special iridescent charcoal gray. **Wiring:** Stereo, 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** Line cord, 2 audio cables. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** Requires mounting space 15⅜" W x 13⅛" D x 4⅞" below top of motor board.

ADP-124
$44.51
(with 1c cartridge)

Garrard Model 50 Automatic Turntable!

• Counter weighted tone arm automatically tracks high quality cartridges . . . a first in popular-priced turntables • New oversize turntable and handsome mat cover for better record support • Compact . . . fits any cabinet or component installation • Plays all 4 speeds automatically or manually • Automatically mixes records of different sizes & same speed • DuPont Delrin® "frictionless" trip mechanisms • Completely assembled

ADP-124, changer only, 13 lbs. . . no money dn., $5 mo. **$44.50**
ADP-124, turntable with choice of 1c offer cartridge below (specify by model no.), 14 lbs. . . no money dn., $5 mo. . **$44.51**
ADA-114-1, 1 lb. Garrard LRS10 45 rpm spindle. **$3.80**
ADA-53W, 3 lbs., Garrard matching walnut base, 14⅝" W x 12¾" D x 3" H. **$4.95**

ADP-124 SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45 & 78 rpm. **Motor:** 4-pole, hum shielded. **Tracking:** Tracks per cartridge specifications. **Color:** Gray and silver. **Wiring:** Stereo, Amplok plug. **Cables furnished:** Line cord and 2 audio. **Power requirements:** 110-130 volts, 60 cycles AC. **Dimensions:** 14¼" W x 12½" D x 4⅜" above and 2⅞" below top of motor board.

ADP-94
$99.51
(with 1c cartridge)

Garrard Lab 80 Stereo Automatic Transcription Turntable!

• Dynamically balanced "Afrormosia wood" tone-arm with integral manual cueing device and adjustable tracking force • New adjustable bias compensator tracks the lightest & most compliant cartridges accurately & without distortion • New massive, non-magnetic 12" turntable with anti-static mat • New isolated motor suspension • Insures professional reproduction of 33⅓ & 45 rpm records • Anti-skate protection • Delrin® "frictionless" trip mechanism • Completely assembled

ADP-94, 25 lbs. . . turntable only . . . no money dn., $10 mo. . . **$99.50**
ADP-94, 26 lbs. . . turntable with choice of any 1c offer cartridge opposite (specify by model no.) . . . no money dn., $10 mo. **$99.51**
ADA-94-1, 1 lb., Garrard LRS9 45 rpm spindle. **$3.80**
ADA-94W, 5 lbs., walnut finish base. . . 16½" W x 13¾" D x 4¼" H. **$6.50**

ADP-94 SPECIFICATIONS—Speeds: 33⅓ & 45 rpm. **Motor:** 4-pole shaded, completely isolated. **Tracking:** Tracks per cartridge specifications. **Color:** Special iridescent charcoal gray. **Wiring:** Stereo, 4-pin, 5-wire system with separate ground connection for hum elimination. **Cables furnished:** Line cord, 2 audio cables. **Power requirements:** 100-130 volts 60 cycles AC. **Dimensions:** 17" W x 14¾" D x 5½" above and 3½" below motor board.

Special 1c Offer Cartridges With Turntable Orders

Shure M44-7 15 "Dynetic" — **Specify By Model No.**

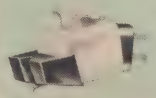
AD-85B MANUFACTURER'S SPECIFICATIONS—Frequency response: 20 to 20,000 cps. **Output:** 11 mv per channel. **Separation:** More than 25 db at 1 kc. **Load impedance:** 47,000 ohms per channel. **Stylus:** .018 mm diamond. **Compliance:** 20.0 x 10^{-6} cm per dyne. **Tracking force:** 1½ to 3 grams.
Model AD-85B, 1 lb. **$19.95**

New! Sonotone 9TAFHC-SD "Ceramic"

AD-15K MANUFACTURER'S SPECIFICATIONS—Frequency response: 20 to 20,000 cps. **Output:** .20 volt. **Separation:** 30 db. **Load impedance:** 1 to 5 megohms. **Stylus:** 0.7 mil diamond, 3 mil sapphire. **Compliance:** 15 x 10^{-6} cm/dyne. **Tracking force:** 1.5-3 grams for professional arms; 3-4 grams for changers.
Model AD-15K, 1 lb. **$7.26**

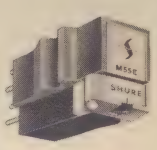
New! Empire 888 "Magnetic"

AD-125G MANUFACTURER'S SPECIFICATIONS—Frequency response: 12-25,000 cps. **Output:** 8 mv/channel. **Separation:** 30 db. **Load Impedance:** 47,000 ohms. **Stylus:** 0.7 mil diamond. **Compliance:** 10 x 10^{-6} cm/dyne. **Tracking Force:** ¾-6 grams. **Tracking Angle:** 15°.
Model AD-125G, 1 lb. **$19.95**



Pickering V15/AT-2 "Magnetic"

AD-105J MANUFACTURER'S SPECIFICATIONS—Frequency response: 20 to 20,000 cps. **Output:** 6.9 mv per cm/sec of recorded level. **Load resistance:** 47,000 ohms. **Stylus:** .7 mil diamond. **Tracking force:** 1 to 4 grams. **Vertical tracking angle:** 15°
Model AD-105J, 1 lb. **$19.95**



New! Shure M55E 15° Stereo Dynetic Cartridge With Elliptical Stylus!

Elliptical diamond stylus and new 15° vertical tracking provide near perfect freedom from distortion, resulting in unmatched purity of sound. Low mass. Scratchproof. Will track at forces of ¾ to 1½ grams. *Only $10 when you order with a Garrard Lab 80, Type A70, or Dual 1009 and 1019 Turntable, if you do not choose a 1c cartridge above!*

Model AD-95R, 1 lb., no money dn., $5 mo. . . **$35.50**

AD-95R MANUFACTURER'S SPECIFICATIONS — Frequency Response: 20 to 20,000 cps. **Output:** 6.6 mv per channel @ 1 kc. **Separation:** Over 25 db @ 1 kc. **Load Impedance:** 47,000 ohms per channel. **Stylus:** Elliptical 0.7 mil diamond. **Compliance:** 25.0 x 10^{-6} cm/dyne. **Tracking force:** ¾ to 1½ grams.

A Cartridge For Only 1¢ More!

New! Dual 1019 Auto-Professional Turntable . . . With 3 Exclusive Features That Close The Gap To Perfection!

ADP-55
$129.51
(with 1c cartridge)

• Exclusive direct dial, continuously variable anti-skating compensation • Exclusive feather-touch cue-control for manual & automatic play • Exclusive single-play spindle that rotates with your records • Cartridge holder adjusts for optimum stylus overhang • Plus all the precision of the Dual 1009 (opposite)

Exclusive New Features! (1) **Direct Dial, Continuously Variable Anti-Skating Compensation** . . . so accurate you can balance stylus force in the groove. Eliminates distortion from unbalanced tracking, ends uneven wear. (2) Feather Touch Cue Control . . . cuing as it should be, dead-center on exact groove intended. (3) Single Play Spindle . . . rotates with record like conventional turntables.

Model ADP-55, turntable only, 20 lbs. . . No money dn., $12 mo. **$129.50**
Model ADP-55, turntable and choice of any 1c cartridge page 26 (specify by model no.) 21 lbs. **$129.51**
ADA-24W, oiled solid walnut base, 3 lbs. **$11.95**
ADA-24-1, 45 rpm spindle, 2 lbs. **$4.80**

ADP-55 SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45 and 78 rpm. Variable over 6% range. **Motor:** High torque continuous pole induction. **Tracking:** Less than 0.2 gram variation from 1st to 10th record. **Turntable:** 7½ lb., dynamically balanced. **Color:** Black/silver. **Cables furnished:** Line cord, 2 audio. **Power requirements:** 100-130 volts, 60 cycles. **Dimensions:** Required mounting space; 10¾" x 12¾" x 6" above and 3" below motor board.

Surpasses Performance Standards Of The Costliest . . . The Dual 1009 Auto/Professional Turntable!

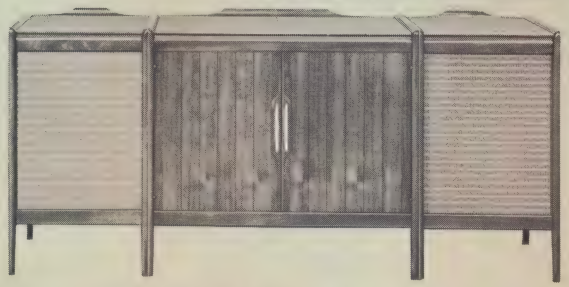
ADP-24
$99.51
(with 1c cartridge)

• Automatic tone arm tracks below ½ gram, yet trips at zero • Permits almost 90° tilt without spilling a note • Anti-skate record protection • Less than 2/10 gram stylus force increase from first to last record • 7½ lb. dynamically-balanced platter • 4 speeds, automatic or manual • Automatically shuts off amplifier after play • Can be started manually while record is rotating or at a standstill • Completely assembled

ADP-24, changer only, 22 lbs. . . no money dn., $10 mo. **$99.50**
ADP-24, changer & choice of any 1c offer cartridge, page 26 (specify model no.) 23 lbs. . . no money dn., $10 mo. **$99.51**
ADA-24W, oiled solid walnut base, 3 lbs. **$11.95**
ADA-24-1, 45 rpm spindle, 1 lb. **$4.80**

ADP-24 SPECIFICATIONS—Speeds: 16⅔, 33⅓, 45 and 78 rpm. **Turntable speed:** All 4 speeds accurate within 0.1% with one to ten records. **Motor type:** 4-pole induction, shock & vibration shielded. **Type of drive:** Friction. **Tracking force variations:** Less than 0.2 grams from 1st to 10th record. **Record capacity:** Up to 10 records. **Record sizes:** 7", 10", 12". **Control functions:** Manual Speed Selector; Manual Record Size Selector; Stop/Start Manual/Automatic switch. **Dimensions:** 10¾" x 12¾", 6" clearance above, 3" below. **Power requirements:** 117 VAC, 60 cps.

The Center Of Attraction In Any Room . . . Deluxe Stereo Furniture!



Contemporary Styling With Practical Component Layout . . . Exclusive Heath Stereo/Hi-Fi Cabinetry!

• Custom designed for Heathkit Stereo/Hi-Fi components . . . accommodates most makes • Beautifully finished in modern walnut • Factory assembled, ready to use • Speaker cabinet can be matched to any 12" or 15" speaker for best tone

Clean, Flowing Lines . . . "Sculptured" Accents! This skillfully crafted equipment cabinet is a masterpiece of sumptuous furniture you'll be proud to place in your home. It is solidly constructed of fine furniture woods which are accented with clean, eye-arresting reliefs. Slim, curved brass door handles highlight the "sculptured" effect. And the modern walnut finish adds a richness that reflects good taste. Completely assembled, ready to house your hi-fi components.

Model AE-20W (walnut), 82 lbs. . . no money dn., $10 mo. **$99.50**
Model AEA-12-4, uncut walnut recorder drawer (7" H x 16" W x 16½" D, Wood ¾" thick) 15 lbs. **$19.95**

Matching Speaker Cabinet!
Use with 12" or 15" speakers. Also has 3⅝" x 10 3/16" slot for optional horn tweeter. Measures 18½" W x 19" D x 32⅜" H.

Model AE-40W (walnut), 58 lbs. . . no money dn., $5 mo. . Each **$44.95**

AE-20 EQUIPMENT ACCOMMODATIONS AND SIZES—Cabinet, overall: 36" W x 32⅜" H x 19" D. **Changer compartment:** 17" W x 15¾" D, mounting board is uncut and can be adjusted in height to accept all record changers sold by Heath, lid has adjustable friction-loaded support. **Record-tape recorder compartment:** 14½" H x 17" W x 17" D, for record storage; space is convertible with accessory sliding drawers below to accommodate tape recorder. **Shelf compartment:** (2) each 17" W x 6" H x 17" D (inside shelf 14" deep); either shelf accepts any Heath Stereo or Mono tuner, Stereo or Mono preamplifier or stereo or mono combination amplifier. **Power amplifier compartments:** 8¾" H x 17" W x 15⅛" D inside, accepts any Heathkit stereo or mono amplifier.

Early American Stereo Center . . . Custom Designed For Audiophiles With An Eye As Appreciative As Their Ear!

• Beautifully finished in stunning salem-maple • Exclusively styled, a special Heathkit design • Custom-designed for Heathkit stereo components • Holds most hi-fi/stereo components • Factory assembled, ready to use

Crafted Of Specially-Selected Woods! Maple veneers and solids all beautifully finished in popular Salem Maple! "Lancaster-Antique" solid-brass handles. Completely assembled & finished.

Model AE-13S, 77 lbs. . . no money dn., $11 mo. **$115.00**
Model AEA-13-1, uncut recorder drawer (7" H x 16" W x 16½" D, wood ¾" thick), 16 lbs. **$20.00**

Matching Speaker Cabinet!
Use 12" or 15" speakers, has 3⅜" x 10-3/16" slot for optional horn tweeter. Measures 18¼" W x 18¾" D x 28" H.

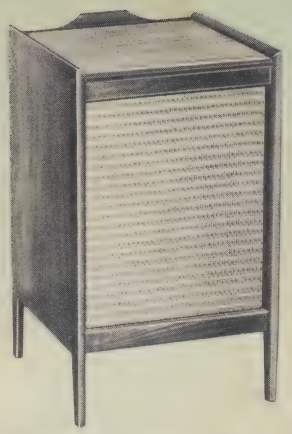
Model AE-23S, 55 lbs. . . no money dn., $6 mo. . . . . Each **$55.00**

AE-13S EQUIPMENT ACCOMMODATIONS AND SIZES: Cabinet, overall: 28" H x 36" W x 18¾" D. **Changer compartment:** 17" W x 16" D x 5¾" H. Mounting board is uncut and can be adjusted in height to accept all record changers sold by Heath, lid has adjustable friction-loaded support. **Record-tape recorder compartment:** 14¾" H x 17" W x 17¼" D for record storage; space is convertible with accessory sliding drawers to accommodate tape recorder. **Shelf compartments:** Top shelf, 6¾" H x 17" W x 15⅞" D. Middle shelf, 6" H x 17" W x 15⅞" D. Bottom shelf, 9" H x 17" W x 17" D. Shelves accept any Heath stereo or mono tuner, stereo or mono preamplifier, or stereo or mono combination amplifier.

NO MONEY DOWN UP TO $300

Build your Heathkit now . . . pay later with the convenient Heath Time Payment Plan. No money down and up to 12 months to pay on orders from $25 to $300 . . . 10% down and up to 18 months on orders from $300 to $500. See Order Blank for details.

Heathkit® Speaker Systems . . .



AS-15
$144.95

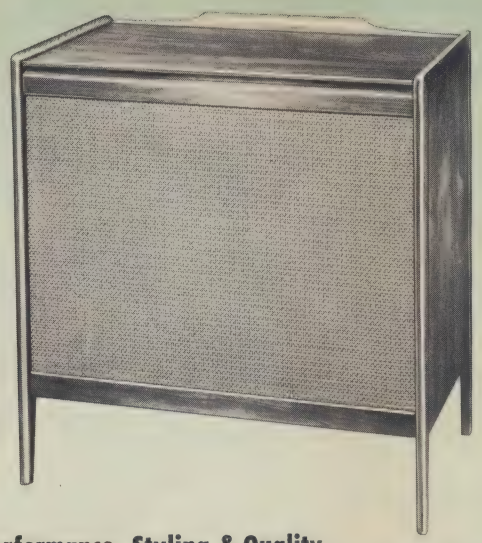
In The Trend To Larger Speaker Systems . . . New Deluxe Heathkit 3-Way System

• 12" high compliance, low resonance woofer • Two special design 2" direct radiator dome-type mid-range speakers • Special design 1" direct radiator dome-type ultra-high frequency tweeter • Response 40 to 20,000 cps • Big voice coils • Heavy ceramic ring magnets • 50-watt program material power capability • High frequency attenuator • Middle frequency attenuator • Preassembled walnut finish enclosure measures 18½" W x 19" D x 32⅜" H • Tube vented, bass reflex design • Styled to match Heath contemporary equipment center

High Compliance Woofer . . . Direct Radiator Mid-Range & Tweeter Components. Both mid-range units have 6¼" frames with 4½", 1 lb. ceramic ring magnets. The ultra-high frequency tweeter has a 4¼" frame with a 2¼", 6 oz. ceramic ring magnet. Its 1" radiating surface is driven by a 1" voice coil. 12" high compliance woofer features a 1½" voice coil and 1 lb. 11 oz. ceramic ring magnet. Free air resonance is 25 cps. Also features 3-way crossover networks, LC and RC types. Crossover points: 1000 cps and 10,000 cps. Floor model cabinet.

Kit AS-15, 82 lbs. . . No money dn., $14 mo. **$144.95**

AS-15 SPECIFICATIONS—Recommended Amplifiers: AR-13A, pg. 18; AR-14, pg. 19; AA-21D, pg. 20; AA-22, pg. 21; AA-100, pg. 23; AA-151, pg. 23; AA-32, pg. 23; AA-13 & AA-23, pg. 24; AA-14, pg. 22. **Frequency Response:** 40 to 20 kc. **Crossover Frequencies:** Low 1000 cps to high frequency 10 kc. **Power Rating:** 50 watts of program material. **Nominal Impedance:** 8 ohms. **Speakers:** (1) 12" Jensen high compliance, low resonance, low frequency; (2) 2" direct radiator dome-type mid-frequency; (1) 1" Jensen direct radiator dome-type ultra high frequency speaker. **Crossover Network: Three Channel:** Low frequency, low pass LC type; Mid-frequency, bandspass LC type; High frequency, high pass RC type filter. **Cabinet:** Walnut finished, tube vented type. **Dimensions:** Overall; 18½" W x 19" D x 32⅜" H.



AS-21W
$239.95

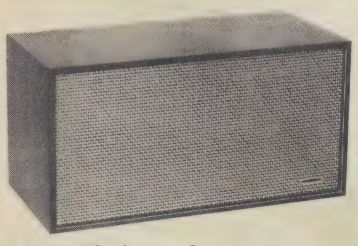
Masterpiece of Performance, Styling & Quality . . . The Famous "Legato Compact"!

• Speakers cover 30-22,000 cps • 800 cps crossover network—completely assembled • Can be driven by as little as 3 watts, handles up to 30 watts • Preassembled walnut-finish cabinet, ready for simple speaker installation • Styling matches AE-20 hi-fi equipment cabinet

Designed For The Discerning. Known by audiophiles the world over for its acoustical excellence—recognized by engineers for achievement in sound technology. Features two Altec Lansing "high compliance" low-frequency speakers that cover the 30 to 800 cps range with a rich, full-bodied tone . . . a specially-designed Altec Lansing exponential horn and high frequency driver combination that recreates the 800 to 22,000 cps range with full fidelity and brilliance. The special 800 cps crossover network is factory assembled, ready for installation in the carefully crafted, acoustically correct cabinet.

Kit AS-21W, 142 lbs. . . no money dn., $22 mo. **$239.95**

AS-21 SPECIFICATIONS—Recommended amplifers: AR-13A, pg. 18; AA-21D, pg. 20; AA-22, pg. 21; AA-100, pg. 23; AA-14, pg. 22; AR-14, pg. 19. **Frequency response:** 30 to 22,000 cps. **Impedance:** 16 ohms. **Capacity:** 30 watts. **Enclosure:** Modified Infinite baffle. **Speakers:** Low frequency, two Altec Lansing 12" high compliance woofers, 1½ lb. magnets; High frequency, one Altec Lansing 800 cycle exponential horn and driver, 53 lb. magnet. **Crossover:** 800 cycle constant K type, assembled. **Control:** high frequency shelving. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled furniture-grade ¾" plywood. **Dimensions:** 32" W x 19" D x 32½" H.



AS-51U
$39.95

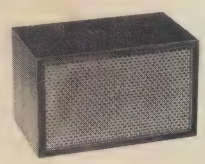
2-Way Hi-Fi Speaker System

• Specially designed speakers—8" woofer and compression-type tweeter with flared exponential horn • Built-in crossover • Tweeter level control • Preassembled unfinished or walnut finish cabinets

Reliable Performance! Covers 50 to 12,000 cps. Use in vertical or horizontal positions. Simply mount speakers and wire crossover network—everything else is pre-built. Works with amplifiers having as little as 3 watts power. Order a pair for stereo.

Kit AS-51U, unfinished, 27 lbs. . . No money dn., $5 mo. **$39.95**
Kit AS-51W, Walnut, 27 lbs. . . No money dn., $5 mo. **$46.95**

AS-51 SPECIFICATIONS—Recommended amplifiers: AR-14, pg. 19; AA-14, pg. 22; AA-32, pg. 23; AA-151, pg. 23; AA-21D, pg. 20; AA-22, pg. 21; AA-100, pg. 23; AA-13 & AA-23, pg. 24. **Frequency response:** 50 to 12,000 cps. **Crossover frequency:** 1600 cps. **Power rating:** Program Material — 25 watts. Single Frequency — 15 watts. **Nominal impedance:** 16 ohms. **Speakers:** Low Frequency—8" Jensen (special design) 6.8 oz. Alnico 5; High Frequency—Jensen compression driver with exponential horn (special design), 4.7 oz. Alnico 5. L-PAD —level control for high frequency driver. **Dimensions:** 11½" H x 23" W x 11¾" D.



AS-81U
$17.50

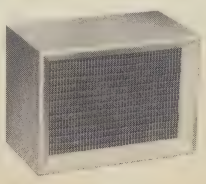
Miniature Hi-Fi 2-Speaker System

• 6" high compliance, mass-loaded woofer • 3" closed back tweeter • Fast, easy assembly • Preassembled unfinished or walnut finish cabinets

Compact Size Ideal For Small Spaces! Yet provides wide 70-14,000 cps response. High compliance woofer with mass-loaded cone matches enclosure. Closed-back cone-type, high frequency tweeter prevents speaker interaction. Assembles in a couple of hours.

Kit AS-81U, unfinished, 10 lbs. **$17.50**
Kit AS-81W, walnut, 10 lbs. **$19.95**

AS-81 SPECIFICATIONS—Recommended amplifers: AA-14, pg. 22, AA-32, pg. 23; AA-13, pg. 24; AA-151, pg. 23; AR-14, pg. 19. **Frequency response:** From 70 to 14,000 cps. **Crossover frequency:** 4000 cps. **Recommended amplifier power:** 6 watts. **Nominal impedance:** 8 ohms. **Cabinet:** Type: infinite. **Dimensions:** 10¾" W x 6½" H x 6-3/16" D; material, ½" veneer plywood. **Speakers:** Tweeter, 3" cone type, 8 ohms, .53 oz. Alnico 5 magnet; Woofer, 5½" cone type, 8 ohms, 10 oz. Syntox No. 6 magnet. **Crossover:** Capacitor type.



AS-41U
$10.95

Lowest Cost Hi-Fi Speaker System

• 6" x 9" extended range dual-cone speaker • Easy assembly • Preassembled unfinished or walnut finish cabinets

Versatile And Easy On The Budget! Fills the bill in a variety of installations . . . place in an extra room, use as an extension speaker to other rooms, or as a center fill-in for a stereo system. Covers 70 to 16,000 cps. Handles 12 watts. Compact in size and price.

Kit AS-41U, unfinished, 8 lbs. **$10.95**
Kit AS-41W, walnut, 8 lbs. **$12.95**

AS-41 SPECIFICATIONS—Recommended amplifers: AA-14, pg. 22; AA-32, pg. 23; AA-151, pg. 23; AA-13, pg. 24; AR-14, pg. 19. **Frequency response:** 70 to 16,000 cps. **Impedance:** 8 ohms. **Capacity:** 12 watts. **Enclosure:** Rear vented box. **Speaker:** 6" x 9" extended range dual cone, 6.8 oz. Alnico 5 magnet. **Cabinet:** Factory assembled, furniture-grade ½" plywood. **Dimensions:** 8" H x 11" W x 6½" D.

NO MONEY DOWN UP TO $300

Build your Heathkit now . . . pay later with the convenient Heath Time Payment Plan. No money down and up to 12 months to pay on orders from $25 to $300 . . . 10% down and up to 18 months on orders from $300 to $500. See Order Blank for details.

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

More Sound For Your Dollar!

HEATHKIT®

AS-10U $59.95

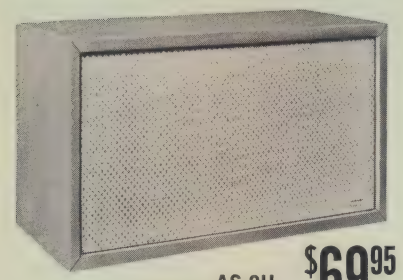
Enjoy The Advantages Of Acoustic Suspension With This Low Cost Speaker System!

• 10" acoustic suspension woofer, two 3½" cone-type tweeters • Takes only 10 watts to drive, yet handles up to 40 watts • Preassembled cabinets, use vertically or horizontally

Easy To Buy, Easy To Drive! Enjoy the extended bass, smooth high frequency response, and the low distortion that has made acoustic suspension systems an audiophile favorite. Covers the 30 to 15,000 cps frequency range. Includes a high frequency level control and L-C crossover network. Handles high wattage program material and is easily driven! Can easily be assembled in 3 hours or less. Choose a pair for stereo.

Kit AS-10U, unfinished, 43 lbs....no money down, $6 mo.....$59.95
Kit AS-10W, walnut, 42 lbs....no money down, $7 mo.....$64.95

AS-10 SPECIFICATIONS—Recommended amplifiers: AA-21D, pg. 20; AA-22, pg. 21; AA-100, pg. 23; AA-151, pg. 23; AA-13 & AA-23; pg. 24; AR-13A, pg. 18. **Frequency response:** 30 to 15,000 cps. **Impedance:** 16 ohms. **Recommended amplifier power:** 10 to 40 watts. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, Syntox 6 ceramic magnet; Tweeter, two 3½" cone units in dispersed array, 1.47 oz. Alnico 5 magnets. **Crossover:** L-C network, 2250 cps. **Control:** High frequency level. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled ¾" furniture-grade plywood. **Dimensions:** 13½" H x 24" W x 11½" D.



AS-2U $69.95

This Versatile Acoustic Suspension System Features Acoustic Research Inc. Woofer!

• 10" acoustic suspension woofer manufactured by Acoustic Research Inc. • Two 5" cross-fired tweeters • Wide-range sound with compact speaker versatility • Easy to build with preassembled cabinet

Distortion-Free Sound In A Compact Enclosure! Fits almost anywhere to accommodate a host of installations. Large 10" woofer with heavy Alnico 5 magnet delivers extended bass response. 2000 cps L-C crossover network plus specially treated and equalized 5" cross-fired tweeters provide unusually clear high frequency distribution. Cabinet is unfinished, so you can apply a finish to match any decor. Order 2 for stereo.

Kit AS-2U, unfinished, 45 lbs....no money down, $7 mo. $69.95

AS-2U SPECIFICATIONS—Recommended amplifiers: AA-21D, pg. 20; AA-100, pg. 23; AA-22, pg. 21; AA-23, pg. 24; AR-13A, pg. 18. **Frequency response:** 40 to 15,000 cps. **Crossover frequency:** 2,000 cps. **Recommended amplifier power:** 20 to 40 watts RMS. **Nominal impedance:** 8 ohms. **Tweeter:** Two 5" cone units, specially treated and equalized, in dispersed array, 2.15 oz. Alnico 5 magnet. **Woofer:** 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet. Resonant Frequency (mounted) 58 cps. **Crossover:** L-C network. **Horizontal dispersion:** 90°. **Size:** 24" W x 13½" H x 11½" D.

AS-2AU $89.95

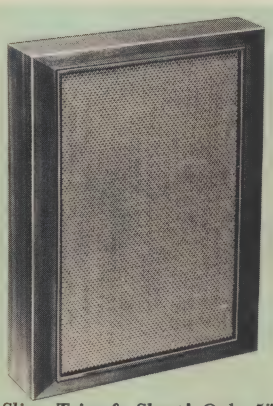
Designed For Today's Advanced Systems . . . Deluxe Acoustic Suspension System!

• Added super tweeter for extended high frequency response • Built-in crossover networks • High frequency level controls • Genuine Acoustic Research Inc. 10" suspension woofer • Two 5" cross-fired tweeters, plus 1⅜" dome-type super-tweeter • Preassembled cabinets

Wide 40-20,000 cps Response! A specially designed super tweeter, dual mid-range, and acoustic suspended woofer combine to reproduce clean, distortion-free sound. Super tweeter and two mid-range cross-fired speakers are controlled by separate level controls. Order a pair for truly superb stereo.

Kit AS-2AU, unfinished, white hardboard, 51 lbs...no money down, $9 mo.....$89.95
Kit AS-2AW, finished walnut, 51 lbs...no money down, $10 mo.....$96.50

AS-2A SPECIFICATIONS—Recommended amplifiers: AA-21D, pg. 20; AA-100, pg. 23; AA-22, pg. 21; AA-23, pg. 24; AR-13A, pg. 18. **Frequency response:** ±5 db, 40 to 20,000 cps. **Impedance:** 8 ohms. **Recommended amplifier power:** 20 watts minimum. **Enclosure:** Infinite baffle, sealed. **Speakers:** Woofer, 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet; Midrange, two 5" cone units, in dispersed array, 2.15 oz. Alnico 5 magnets; Super-tweeter, 1⅜" dome-type construction. **Crossover:** L-C network, 2000 & 7500 cps. **Controls:** Individual levels for tweeter and mid-range speakers. **Dispersion:** 90° horizontal. **Cabinet:** Factory assembled ¾" furniture-grade plywood. **Dimensions:** 13½" H x 24" W x 11⅜" D.



"Profile" . . . The 3-Way Speaker System That Fits Virtually Anywhere!

• 3 specially-designed speakers—10", 6", 3½" • 5" slim . . . ideal for floor, shelf, or wall installation • Factory assembled, tube-tuned bass reflex cabinet, available unfinished or walnut finish

AS-22U $49.95

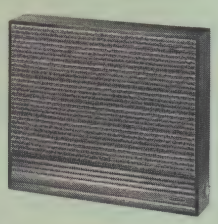
Slim, Trim & Short! Only 5" deep, 25" high and 19½" wide . . . install the Heathkit "Profile" virtually anywhere! Set it on the floor, suspend it on a wall, or tuck it horizontally or vertically into a bookcase or on a shelf. **Superior Sound!** Inverted-design 10" woofer with 1 lb. Alnico magnet, 6" close back speaker to handle mid-ranges, and a 3½" tweeter produces the "highs". Factory assembled cabinets available unfinished or in walnut. Hangers & felt feet included.

Kit AS-22U, unfinished, 34 lbs...no money dn., $5 mo.....$49.95
Kit AS-22W, walnut, 35 lbs...no money dn., $6 mo.....$54.95

AS-22 SPECIFICATIONS—Recommended amplifiers: AR-13A, pg. 18; AA-22, pg. 21; AA-151, pg. 23; AA-21D, pg. 20; AA-100, pg. 23; AA-23 & AA-13, pg. 24; AA-14, pg. 22; AR-14, pg. 19. **Frequency response:** 55 to 12,500 cps. **Crossover frequency:** 2250 cps. **Recommended amplifier power:** 10 to 25 watts. **Nominal impedance:** 8 ohms. **Woofer:** 10" special inverted design 1.1 lb. Alnico V magnet. **Mid-range:** 6" closed back, 2.15 oz. Alnico V magnet. **Tweeter:** 3½" closed back, 2.15 oz. Alnico V magnet. **Cabinet:** Bass reflex, tube-tuned, factory assembled of ¾" furniture-grade plywood. **Dimensions:** 19½" W x 25½" H x 5" D.

Low Cost 2-Way System . . . 3 Speakers In Flat Miniature Wall Mount Cabinet!

• 5¾" woofer and two 3" tweeters • Side mounted level control • Easy to assemble • Compact—ideal for wall, shelf or table • Preassembled unfinished or walnut finish cabinets



AS-193U $22.50

Fits On A Table, Shelf Or Bookcase . . . yet performs like a speaker twice its size. Ideal for rec room extension, too! Boasts a special 5¾" woofer and two 3" tweeters that cover 65-14,000 cps. Use with amplifiers having 4, 8 or 16 ohm impedances and up to 6 watts power—higher rated amplifiers, adjusted for reasonable listening levels also may be used. Simple to build—just mount the three speakers in the preassembled cabinet. Pick a pair for stereo!

Kit AS-193U, unfinished, 12 lbs.....$22.50
Kit AS-193W, walnut, 12 lbs...no money dn., $5 mo.....$24.95

AS-193 SPECIFICATIONS—Recommended amplifiers: AA-14, pg. 22; AA-32, pg. 23; AA-151, pg. 23; AR-14, pg. 19; AA-13, pg. 24. **Impedance:** May be used with amplifier having 4, 8, or 16 ohm output. **Frequency range:** 65-14,000 cps. **Crossover frequency:** 4,000 cps. **Speaker power rating:** 6 watts. Higher rated amplifiers, adjusted for reasonable listening levels, may be used. Adequate room sound with 1 watt to speaker. **Nom. woofer size:** 5½" cone type. **Dimensions:** 12⅞" H x 15⅝" W x 2¾" D.

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

Separate Speakers & Accessories

Our Finest . . . 12" 2-Way High Compliance, Edge-Damped Hi-Fi Speaker!

Connoisseur Quality Throughout! Finest Materials available for tonal realism . . . smooth 20 to 15,000 cps response . . . high compliance edge-damped woofer cone . . . low crossover frequency . . . reflexed-horn high frequency unit . . . 1½" & 1" voice coils . . . die-cast metal frame . . . tan & cinnamon color styling; polarized binding posts; 1-year guarantee; high frequency separate level control; cabinet recommendations.

Model AS-183, 15 lbs. . . no money dn., $5 mo. **$49.95**
Model AS-183-2, 30 lbs. . . no money dn., $10 mo. . . . . Special Pair Price **$95.00**

AS-183 SPECIFICATIONS—Size: 12". **Impedance:** 8 ohms. **Power rating:** 30 watts. **Frequency response:** 20-15,000 cps. **Cone resonance:** 25 cps. **Magnet weights:** 1¾ lbs., 4.65 oz.

Accommodates 25 Watts . . . 12" 3-Way High Compliance, Edge-Damped Hi-Fi Speaker!

Superb Reproduction Over Entire 35-15,000 cps Range! Features high compliance, edge-damped woofer for deep, rich bass; high compliance cone for mid-range realism; and a special tweeter for crystal clear highs. Polarized speaker terminals provide proper phasing; 1¾ lb. ceramic annular-ring magnet; built-in crossover network; separate high frequency level control; cinnamon & tan color styling; 1-year guarantee.

Model AS-173, 14 lbs. . . no money dn., $5 mo. **$39.95**
Model AS-173-2, 28 lbs. . . no money dn., $8 mo. . . . . Special Pair Price **$76.00**

AS-173 SPECIFICATIONS—Size: 12". **Impedance:** 8 ohms. **Power rating:** 25 watts. **Frequency response:** 35-15,000 cps. **Cone resonance:** 40 cps. **Magnet weights:** 1¾ lbs., 2½ oz.

Boasts 3 Radiating Elements . . . 12" 3-Way Coaxial Hi-Fi Speaker! ions

Features True Coaxial Design . . . with 3 separate radiating elements . . . woofer, tweeter and special-design horn tweeter. Mechanical & electrical crossover networks; die-cast frame construction assures precise alignment of speaker elements; high efficiency annular-ring magnets; polarized speaker terminals; separate high frequency level control; 1-year guarantee; cinnamon & tan color styling; cabinet recommendations.

Model AS-163, 12 lbs. . . no money dn., $5 mo. **$29.95**
Model AS-163-2, 24 lbs. . . no money dn., $6 mo. . . . . Special Pair Price **$57.00**

AS-163 SPECIFICATIONS—Size: 12". **Impedance:** 8 ohms. **Power rating:** 20 watts. **Frequency response:** 40-15,000 cps. **Cone resonance:** 60 cps. **Magnet weights:** 13 oz., 1 oz. **Voice coil sizes:** 1½" and 1".

Handles 15 Watts, Covers 50-15,000 cps . . . 12" 2-Way Coaxial Hi-Fi Speaker!

Full-Range Sound At Big Savings! True coaxial design features separate woofer & tweeter with a built-in capacitive crossover network. High frequency level control permits balancing of highs and lows to fit room acoustics. Includes rigid die-cast metal frame, polarized binding posts; cinnamon & tan color styling; 1-year guarantee; cabinet recommendations.

Model AS-153, 10 lbs. **$19.95**
Model AS-153-2, 20 lbs. . . no money dn., $5 mo. . . . . Special Pair Price **$38.00**

AS-153 SPECIFICATIONS—Size: 12". **Impedance:** 8 ohms. **Power rating:** 15 watts. **Frequency response:** 50-15,000 cps. **Cone resonance:** 60 cps. **Magnet weights:** 10 oz., 1.47 oz. **Voice coil sizes:** 1" and 9/16".

Have A Space Problem? Then Choose This 8" 2-Way Coaxial Hi-Fi Speaker!

Top Value In An 8" Speaker! Features separate cone woofer & tweeter, plus built-in capacitive crossover network and high frequency level control. Only 3⅝" deep . . . ideal for limited space enclosures. Has die-cast frame; polarized binding posts; cinnamon & tan color styling; 1-year guarantee; cabinet recommendations.

Model AS-133, 6 lbs. **$14.95**
Model AS-133-2, 12 lbs. . . no money dn., $5 mo. . . . . Special Pair Price **$28.50**

AS-133 SPECIFICATIONS—Size: 8". **Impedance:** 8 ohms. **Power rating:** 12 watts. **Frequency response:** 50-14,000 cps. **Cone resonance:** 70 cps. **Magnet weights:** 10 oz., 0.68 oz. **Voice coil sizes:** 1" and 9/16".

Another Space-Saver . . . Low Cost 8" Dual-Cone Hi-Fi Speaker!

Ideal Where Space Is At A Premium! Only 3½" deep . . . perfect for "in-wall" installations & shallow cabinets. Features die-cast frame; polarized binding posts; dual-cone design; 10-ounce annular-ring magnet; cinnamon & tan color styling; 1-year guarantee; cabinet recommendations.

Model AS-123, 5 lbs. **$9.95**
Model AS-123-2, 10 lbs. . . Special Pair Price **$19.00**

AS-123 SPECIFICATIONS—Size: 8". **Impedance:** 8 ohms. **Power rating:** 12 watts. **Frequency response:** 50-12,000 cps. **Cone resonance:** 70 cps. **Magnet weight:** 10 oz. **Voice coil size:** 1".

Enjoy Added Realism & Armchair Comfort With These Stereo Accessories!

A New! Telex "Adjustatone" Stereo Headset

Big 3½" speakers . . . over 7 sq. in. of cone area . . . deliver wide response. Exclusive "Forward Sound" acoustic effect puts stereo up front for "audience seat" listening. Adjust to normal "in-head" stereo by simply reversing headphones. Lightweight foam cushions . . . easily adjustable. 8' cord with phono plug.

MODEL ADP-135, 2 lbs. **$15.95**

ADP-135 SPECIFICATIONS: Driver Element: Dynamic. **Sensitivity:** 100 db/mv. **Frequency Response:** 10-15,000 cps. **Impedance:** Designed to operate from 3-16 ohm output sources. **Distortion:** At Normal Listening Levels, less than 1%. **Cord Length:** 8 ft. 4-wire with 3-circuit phono plug.

B Telex ST-11 Stereo Headset

Relax and enjoy your favorite music anywhere in the room without destroying the "true" stereo effect! Soft, pliable foam rubber muffs shut out "unwanted" outside noise . . . help develop excellent bass response and wide frequency range! Comfortable, lightweight! Easy-to-clean stainless steel headband and yoke. Order yours now!

MODEL ADP-92, 2 lbs. **$23.92**

ADP-92 SPECIFICATIONS—Driver element: Dynamic. **Sensitivity:** better than 95 db. **Frequency response:** 16 to 15,000 cps. **Impedance:** 8 ohms for use with 3 to 16 ohm sources. **Power input:** 15 milliwatts, 1 watt maximum. **Cord:** 4-wire 12 ft. long with spade terminals. **Color:** Tan & Brown.

C Stereo Headphone Control Box!

Simply switch from speaker to headphone listening *without* leaving your favorite chair! Connects to any amplifier regardless of power, & has standard jacks to accommodate *any impedance* stereo headset! Allows separate control of 2 headsets, plus individual adjustment for each ear! Includes 15' of cable & assembles easily in 1½ hours! Compact . . . 3" W x 6" D x 3¼" H . . . fits anywhere! Order yours now!

Kit AC-13, 3 lbs. **$9.95**

Save 5% On Your Heathkit Stereo/Hi-Fi System—Order Any Program Source, Amplifier, And Speaker; Deduct 5% On Order Blank.

HEATHKIT®

Heathkit "Single-Bander" SSB Transceivers . . .
Choose 80, 40, or 20 Meter Models

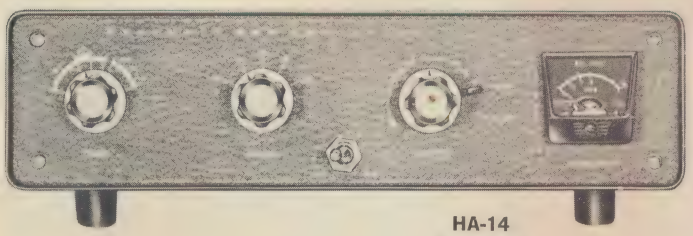
• True transceivers for 80, 40, or 20 meter SSB operation • LSB on 80 & 40 meters, USB on 20 meters • 200 watts P.E.P. input—Two 6GE5 RF amplifiers • Excellent exciter for operation with the KW Kompact • Crystal filter type SSB generation • ALC, AVC, and S-meter • Built-in VOX & push-to-talk circuitry • Stable low frequency VFO • 2 kc dial divisions—6" bandspread—vernier tuning

For The Ham On The Move . . . Or For The Economy Minded . . . Here are filter type SSB transcievers which operate either fixed or mobile!

Kit HW-12: 80-meter, 15 lbs. . . No money down, $11 mo. **$119.95**
Kit HW-22: 40-meter, 15 lbs. . . No money down, $11 mo. **$119.95**
Kit HW-32: 20-meter, 15 lbs. . . No money down, $11 mo. **$119.95**
GH-12, Push-to-talk and VOX microphone. . . 2 lbs. **$6.95**
Kit HRA-10-1, Plug-in 100 kc crystal calibrator. . . 1 lb. **$8.95**
Kit HP-13, DC Power Supply (Mobile) 7 lbs. . . no money dn., $6 mo. **$59.95**
Kit HP-23, AC Power Supply (Fixed station), 19 lbs. . . no money dn., $5 mo. **$39.95**
Kit HS-24, Mobile Speaker, 4 lbs. **$7.00**

SPECIFICATIONS—RF input: 200 watts PEP. **Sideband generation:** Crystal lattice band-pass filter method. **Stability:** 200 cps per hour after warm-up. **Carrier & unwanted sideband suppression:** 45 db. **Frequency coverage:** HW-12, 3.8—4.0 mc; HW-22, 7.2—7.3 mc; HW-32, 14.2—14.35 mc. **Receiver sensitivity:** 1 uv for 15 db (S+N)/N ratio. **Receiver selectivity:** 2.7 kc @ 6 db, 6.0 kc @ 50 db. **Output:** 50 ohm fixed (unbalanced). **Operation:** HW-12 & HW-22, LSB; HW-32, USB. **Audio output:** 1 watt @ 8 ohms. **Mike input:** Hi-Z. **Panel controls:** Frequency, final tune, function (OFF-PTT-VOX-TUNE), RF gain, AF gain (pull for crystal calibrator), VOX gain, meter. Front panel screw-driver adjust for S-meter and VOX delay. **Rear panel controls:** Mike gain, tune level, final bias. **Tube complement:** Fourteen tube heterodyne circuit; (3) 6EA8's mic. amp., VOX relay amp., IF amp, RF amp., Recvr. mixer; (5) 6AU6's, VFO, VOX amp., IF amps., Xmtr. mixer; (1) 6BE6, VFO isolator (HW-12), Het. osc. and mixer (HW-22 & HW-32); (1) 12BY7 Driver; (1) 12AT7 Xtal. osc., product det.; (1) 6EB8 Audio amp. and output; (2) 6GE5 RF output. **Power requirements:** 800 VDC @ 250 MA peak, 250 VDC @ 100 MA,—130 VDC @ 5 MA, 12 VAC or VDC @ 3.75 amperes. **Cabinet dimensions:** 6¼'' Hx12¼'' Wx10'' D.

HW-12
$119.95



HA-14
$99.95

Heathkit "KW Kompact" . . . A New Dimension In Amateur Radio . . . 1000 Watts x 1 Foot Wide x $99.95

• 1000 watts P.E.P. • Tunes 80 through 10 meters • ALC output to exciter • Built-in antenna change-over relay • Built-in SWR meter aids antenna adjustments on the road & monitors for maximum efficiency • Pretuned broad-band input circuit requires no tuning • Engineered with a pair of rugged tubes ideally suited to mobile operation (572-B's or T-160-L's) • Full provision for control of "remotely" located AC or DC power supply

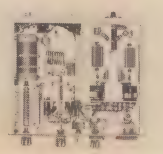
The World's Smallest Kilowatt SSB Linear Amplifier . . . gives mobile signals added strength for reliable communication. With the appropriate power supply, the "KW Kompact" operates fixed or mobile. It can be driven by most SSB transmitters in the 100 watt output range. Go "KW Kompact" with a "Single-Bander" or SB-100 and get top performance . . . fixed or mobile.

Kit HA-14, 10 lbs. . . No money down, $10 mo. **$99.95**
Kit HP-14, D.C. Power Supply, 10 lbs., no money dn., $9 mo. **$89.95**
Kit HP-24, A.C. Power Supply, 22 lbs., no money dn., $5 mo **$49.95**

HA-14 SPECIFICATIONS—Band coverage: 80, 40, 20, 15, and 10 meters. **Maximum power input:** SSB, 1000 watts P.E.P. **Driving power required:** 100 watts P.E.P. **Duty cycle:** 50% (SSB voice modulation). **Third order distortion:**—30 db or better at 1000 watts P.E.P. **Output impedance:** Fixed 52 ohms unbalanced. SWR not to exceed 2:1. **Input impedance:** 52 ohms unbalanced; broad-band pretuned input circuit. **Meter functions:** 0-6 relative power & 1:1 to 3:1 SWR. **Front panel controls:** Tuning, band switch, relative power sensitivity control, meter switch (FWD & SWR), power switch (off, on). **Tube complement:** Two 572-B (or two T160-L) in parallel. **Power requirements:** 2000 VDC at 500 ma SSB peak, —110 VDC at 60 ma, and 12.6 V. AC or DC at 4 amperes. **Cabinet Size:** 12-3/16'' W x 3-3/16'' H x 10'' D.

Picture a "KW Kompact" on your operating desk. Handsome design, small size. Ideal for portable operation, too!

A kilowatt in a car? Stack your KW Kompact with your transceiver . . . in most cars there's room to spare.



Inside, a neat layout that makes assembly easy . . . quality components for dependable operation.

HO-13
$82.95

Heathkit "Ham-Scan" Spectrum Monitor

"Ham-Scan" Visually Shows All Signals Within Your Receiver Bandpass And Up To 50 KC Above And Below The Frequency To Which You Are Tuned . . . adds sight to sound for signal reports. Operates with IF's of 455, 1600, 1650, 1681, 2075, 2215, 2445, 3000, 3055, 3395 kc. Identifies emission types . . . pinpoints spurious signals.

Kit HO-13, 13 lbs., . . .
no money dn., $9 mo. **$82.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

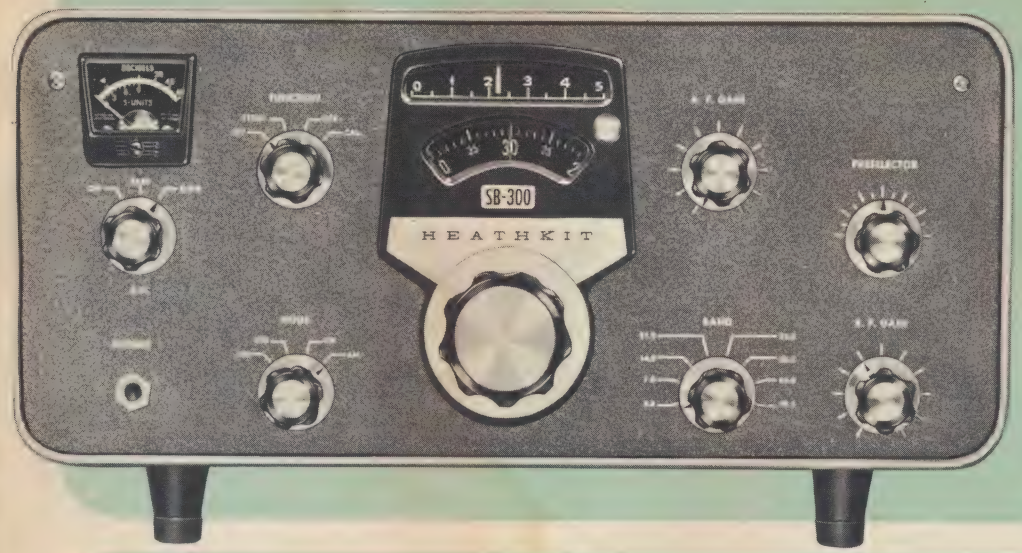
HO-10
$64.95

HO-10 Signal Monitor

Here's The Most Widely Chosen Amateur Scope On The Market . . . Displays envelope, AF & RF trapezoid patterns, handling power outputs from 5 watts to 1 kilowatt. Simple to connect, yet the HO-10 provides the true, accurate picture of your transmitted envelope . . . positively spots overmodulation.

Kit HO-10, 13 lbs.
no money dn., $7 mo. **$64.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Heathkit® Deluxe SB-Series Sets The Pace

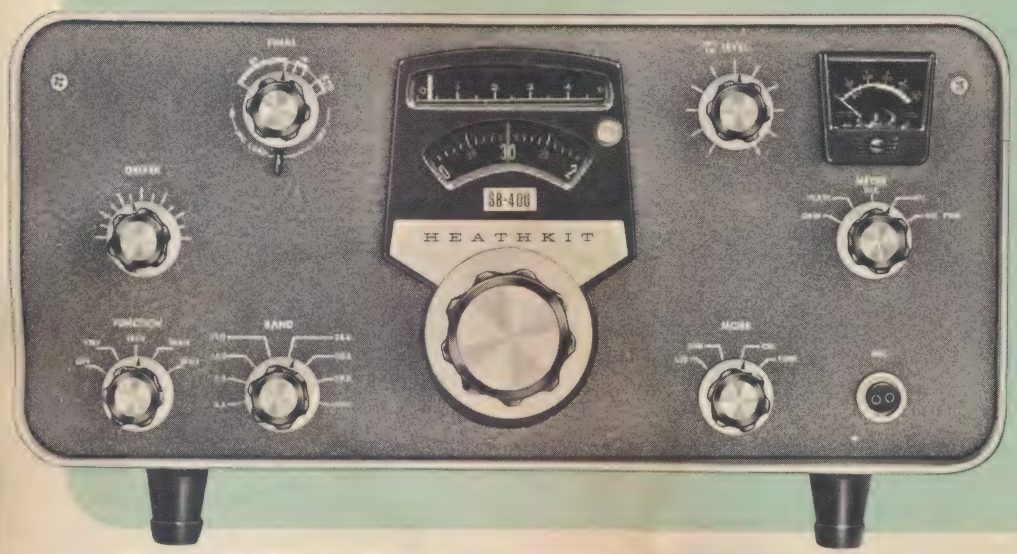


SB-300

$250.00

See The New SB-600 Matching Speaker On Page 34

• A New standard of amateur performance & value • Complete coverage of 80 through 10 meter amateur bands with all crystals furnished, plus provision for VHF converters • Crystal-controlled front-end for same rate tuning on all bands • 1 kc dial calibrations—100 kc per dial revolution • Bandspread equal to 10 feet per megacycle • Tuning dial to knob ratio approx. 1-to-4 • Provision for Transceive operation with matching SB-400 Transmitter • Prebuilt Linear Master Oscillator (LMO), wiring harness and two heavy-duty circuit boards for fast, easy assembly • Professional styling & features at 60% savings



SB-400

$325.00

• Built-in power supply • Complete transceive capability with SB-300 Receiver • Linear master oscillator frequency control • Built-in antenna change-over relay • All crystals supplied for complete 80-10 meter coverage • Automatic level control for higher talk power, minimum distortion • 180 watts PEP SSB, 170 watts CW • Crystal filter type SSB generation • Operates SSB (upper or lower sideband) & CW • VOX & PTT control in SSB operation, VOX operated CW break-in using CW sidetone • CW "shift" transceive operation to eliminate transceiver chasing • Crystal controlled heterodyne oscillators • 1 kc dial calibration—100 kc per dial revolution • Dial bandspread equal to 10 feet per megacycle • 500 kc coverage per bandswitch position • Switched 120 V AC for external amplifier antenna relay

SB-200

$200.00

• 1200 watts P.E.P. input SSB—1000 watts CW • 80 through 10 meter band coverage • Built-in SWR meter—Antenna relay—Solid-state power supply • Automatic Level Control (ALC) • Shielded, fan-cooled amplifier compartment • Pre-tuned cathode input circuit for maximum efficiency & low distortion • Circuit-breaker power supply protection—no fuses • Designed for 120/240 volt operation

For Value & Performance

HEATHKIT®

Heathkit SB-300 Amateur Receiver

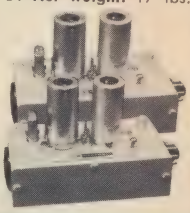
Your Best Buy In An Amateur Radio Receiver! The Heathkit SB-300, the first in this deluxe series of SSB equipment, has set the standards for value & performance in amateur-band receivers. A high-performance, five-band, 80-10 meter receiver with built-in power supplies, optional 6 and 2 meter converters, and tuning for AM, CW, and SSB . . . the SB-300, at a fraction of the cost of others, is a receiver that outperforms them all! To believe it, check out the reviews in the magazines . . . or better yet, get on the air, and talk to a ham who owns one.

Stable, Accurate, Versatile. Drift less than 100 cps *per hour* after warm up . . . less than 100 cps with a 10% line voltage variation! A linear master oscillator with 1 kc dial calibrations that is electrically accurate to within *400 cps* on all bands and visually accurate within 200 cps! And there's a built-in crystal calibrator and a no-backlash vernier dial drive to help. Nothing's been left out in this design . . . a sealed 2.1 kc crystal bandpass filter; optional AM and CW crystal filters; provision for optional VHF converters; provision for transceive mode with the SB-400 below . . . everything you need to put it to work in your shack and in exactly the way you've been wanting a receiver to work.

Order Your SB-300 Now! This is the one you've been waiting for . . . a deluxe, professional receiver with a realistic price tag . . . know the enjoyment of operating with the best . . . with your own SB-300!

Kit SB-300, less speaker, 23 lbs., no money dn., $23 mo. **$250.00**
SBA-300-1 Optional AM crystal filter (3.75 kc), 1 lb. **$19.95**
SBA-300-2 Optional CW crystal filter (400 cps), 1 lb. **$19.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

SB-300 SPECIFICATIONS—Frequency range (megacycles): 3.5 to 4.0, 7.0 to 7.5, 14.0 to 14.5, 21.0 to 21.5, 28.0 to 28.5, 28.5 to 29.0, 29.0, to 29.5, 29.5 to 30. **Intermediate frequency:** 3.395 megacycles. **Frequency stability:** Less than 100 cps per hour after 20 min. warmup under normal ambient conditions. Less than 100 cps for ±10% line voltage variation. **Visual dial accuracy.** Within 200 cps on all bands. **Electric dial accuracy:** Within 400 cps on all bands after calibration at nearest 100 kc point. **Backlash:** No more than 50 cps. **Sensitivity:** Less than 1 microvolt for 15 db signal plus noise-to-noise ratio for SSB operation. **Modes of operation:** Switch selected; LSB, USB, CW, AM. **Selectivity:** SSB: 2.1 kc at 6 db down, 5.0 kc at 60 db down (crystal filter supplied). AM: 3.75 kc at 6 db down, 10 kc at 60 db down (crystal filter available as accessory). CW: 400 cps at 6 db down, 2.5 kc at 60 db down (crystal filter available as accessory). **Spurious response:** Image and IF rejection better than 50 db. Internal spurious signals below equivalent antenna input of 1 microvolt. **Audio response:** SSB: 350 to 2450 cps nominal at 6 db. AM: 200 to 3500 cps nominal at 6 db. CW: 800 to 1200 cps nominal at 6 db. **Audio output impedance:** Unbalanced nominal 8 ohm speaker and high impedance headphone. **Audio output power:** 1 watt with less than 8% distortion. **Antenna input impedance:** 50 ohms nominal. **Muting:** Open external ground at Mute socket. **Crystal calibrator:** 100 kc crystal. **Front panel controls:** Main tuning dial; function switch; mode switch; AGC switch; band switch; AF gain control; RF gain control; preselector; phone jack. **Rear apron conections:** Accessory power plug; HF antenna; VHF #1 antenna; VHF #2 antenna; mute; spare; anti-trip; 500 ohm; 8 ohm speaker; line cord socket; heterodyne oscillator output; LMO output; BFO output; VHF converter switch. **Tube complement:** (1) 6BZ6 RF amplifier; (1) 6AU6 Heterodyne mixer; (1) 6AB4 Heterodyne oscillator; (1) 6AU6 LM osc.; (1) 6AU6 LMO mixer; (2) 6BA6 IF amplifier; (1) 6AU6 Crystal calibrator; (1) 6HF8 1st audio, audio output; (1) 6AS11 Product Detector, BFO, BFO Amplifier. **Power supply:** Transformer operated with silicon diode rectifiers. **Power requirements:** 120 volts AC, 50/60 cps, 50 watts. **Dimensions:** 14⅞" W x 6⅝" H x 13⅜" D. **Net weight:** 17 lbs.



Plug-in VHF Converters For SB-300

6 meter model extends coverage from 48-54 mc (50-52 mc crystal supplied). 2 meter model extends coverage from 142-150 mc (144-146 mc crystal supplied). Designed to plug-in to SB-300, but work with any receiver having proper voltages and 10 meter coverage.

SBA-300-3 (6 meter), 2 lbs. **$19.95**
SBA-300-4 (2 meter), 2 lbs. **$19.95**

Heathkit SB-400 Transmitter

Incomparable In Value, Performance, & Design! The Heathkit SB-400 brings you the finest SSB Transmitter at tremendous dollar savings. The unique design features of the SB-400 include the use of compactron tubes for space-saving component layout, and heavy-duty circuit board construction plus a precut wiring harness for fast assembly, stable operating characteristics, and years of trouble-free performance. The SB-400 is the ideal "mate" for the SB-300, and offers complete transceive capability. It is your best value in SSB transmitters, bar none!

Check These Quality Features. Unique mechanical design combined with a prebuilt Linear Master Oscillator (LMO) for smooth, effortless tuning . . . 1 kc dial calibrations for precise frequency settings . . . 100 kc per dial revolution for bandspread equal to 10 feet per megacycle . . . a zero-set knob for precise calibration to a secondary standard . . . complete shielding and isolation of circuits for high stability and maximum TVI protection . . . built-in heavy-duty power supply (a feature not found in more expensive comparable transmitters) . . . and many more extras.

Beautiful Styling—Sturdy Construction. Neat, modern low-profile cabinet is attractively finished in light gray-green and fully perforated for good ventilation. Cabinet top is hinged for easy access to all inside-top components. Front panel features green "textured" finish with dark green molded dial escutcheon and knobs with spun aluminum inserts. Heavy-gauge aluminum chassis construction provides extra strength without excessive weight.

Easy To Build Too! Factory built LMO and crystal filter; just two easy circuit boards and the help of three wiring harnesses.

Order Your SB-400 Now! It belongs in your ham shack.

Kit SB-400, 34 lbs., $33 dn., $28 mo. **$325.00**
Export model available for 115/230 VAC, 50-60 cps; write for prices.
HDP-21 (SSB "Ham" Mike, see pg. 35), 4 lbs., no money dn., $5 mo. **$29.40**

SB-400 SPECIFICATIONS—Emission: SSB (upper or lower sideband) and CW. **Power input:** 170 watts CW, 180 watts P.E.P. SSB. **Power output:** 100 watts (80-15 meters), 80 watts (10 meters). **Output impedance:** 50 to 75 ohm—less than 2:1 SWR. **Frequency range:** (mc) 3.5—4.0; 7.0—7.5; 14.0—14.5; 21.0—21.5; 28.0—28.5; 28.5—29.0; 29.0—29.5; 29.5—30.0. **Frequency stability:** Less than 100 cps per hr. after 20 min. warmup. **Carrier suppression:** 55 db below peak output. **Unwanted sideband suppression:** 55 db @ 1 kc. **Intermodulation distortion:** 30 db below peak output (two-tone test). **Keying characteristics:** Break-in CW provided by operating VOX from a keyed tone (Grid block keying). **CW sidetone:** 1000 cps. **ALC characteristics:** 10 db or greater @ 0.2 ma final grid current. **Noise level:** 40 db below rated carrier. **Visual dial accuracy:** Within 200 cps (all bands). **Electrical dial accuracy:** Within 400 cps after calibration at nearest 100 kc point (all bands). **Backlash:** Less than 50 cps. **Oscillator feed-through mixer products:** 55 db below rated output (except 3910 kc crossover which is 45 db). **Harmonic radiation:** 35 db below rated output. **Audio input:** High impedance microphone or phone patch. **Audio frequency response:** 350 to 2450 cps ±3 db. **Power requirements:** 80 watts STBY, 260 watts key down @ 120 V AC line. **Dimensions:** 14⅞" W x 6⅝" H x 13⅜" D.

Heathkit SB-200 Kilowatt Linear Amplifier

A Husky Fixed-Station Kilowatt Linear . . . Complete With Built-In Power Supply . . . Only $200.00! Here's a compact, self-contained final amplifier that provides 1200 watts P.E.P. input SSB, and 1000 watts CW, and matches the clean, uncluttered styling of the SB-300 & SB-400.

Completely Versatile. A high efficiency grounded-grid amplifier, the SB-200 can be driven by most popular SSB & CW exciters in the 150-200 watt power range. Can be operated from 120 or 240 VAC, feeds into the popular 52 ohm (or 75 ohm) unbalanced transmission line.

Loaded With Features. Such as the pre-tuned cathode input circuit for maximum efficiency and low distortion . . . Automatic Level Control output for automatic exciter control . . . two heavy-duty 572B/T-160L final amplifier tubes, fan-cooled for maximum life . . . complete shielding for TVI protection and stability . . . separate pi-network output coils for 80-20 & 15-10 . . . conservatively rated solid-state power supply for long life and dependability . . . circuit breaker protection . . . built-in antenna relay for operating convenience (antenna is automatically switched to exciter when linear is turned off) . . . built-in panel meter that measures SWR, Relative Power, plate current, grid current, and high voltage . . . sturdy, but lightweight, one piece aluminum chassis that is partitioned for extra strength and isolation (the whole thing only weighs 35 lbs.).

Easy To Build. Wide open layout plus a heavy duty circuit board for the power supply.

Now Is The Time! If you've been yearning for a full gallon, put this one on your desk top. For here is high quality, high power SSB at the price you've been waiting for . . . six watts per dollar! Order your SB-200 today!

Kit SB-200, 41 lbs., no money., $19 mo. **$200.00**

SB-200 SPECIFICATIONS—Band coverage: 80, 40, 20, 15 & 10 meters. **Maximum power input:** 1200 watts P.E.P. SSB, 1000 watts CW. **Driving power required:** 100 watts. **Duty cycle:** SSB, continuous voice modulation; CW, 50% (key down time not to exceed 5 min.). **Third order distortion:** 30 db or better at 1000 watts P.E.P. **Output impedance:** 50 to 75 ohm unbalanced; variable pi-output circuit. SWR not to exceed 2:1. **Input impedance:** 52 ohm unbalanced; broad-band pretuned input circuit requires no tuning. **Meter functions:** 0-100 ma grid current, 0-1000 ma plate current, 0-1000 relative power, 1:1 to 3:1 SWR, 1500 to 3000 volts high voltage. **Front panel controls:** Load; Tune; Band; Relative Power Sensitivity; Meter Switch. Grid-Plate-Rel. Power-SWR-HV; and Power Switch, on/off. **Tube complement:** Two 572B/T-160-L (in parallel). **Power requirements:** 120 volts AC @ 16 amperes (max.), 240 volts AC @ 8 amperes (max.). **Cabinet size:** 14⅞" W x 6⅝" H x 13⅜" D. **Net weight:** 35 lbs.

The World's Most Advanced SSB

• 180 watts input P.E.P. SSB—170 watts input CW on five bands, 80-10 meters • Switch selection of Upper or Lower sideband or CW • Built-in CW sidetone • Operates PTT or VOX • Transceiver tuning with Heath SB-Series LMO (Linear Master Oscillator; features 1KC dial calibration) or xtal-control transmit with VFO receive or crystal-control transceive • Separate offset CW carrier crystal • Triple Action Level Control™ • Built-in 100 kc crystal calibrator • Quiet, enclosed relays • Fixed or mobile operation with appropriate power supply • Fast assembly with circuit boards and wiring harnesses • Simple alignment—requires only a VTVM or VOM, a dummy load and a broadcast receiver

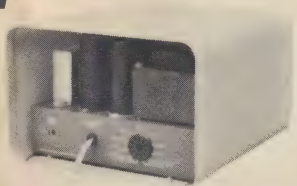
SB-100
$360.00

• Features the Heath SB-Series LMO (Linear Master Oscillator) for high stability, linear tuning, and 1 kc dial calibration • Full SSB-CW transceive operation on six meters • 180 watts input PEP SSB—150 watts CW • Switch select for Upper Sideband/Lower Sideband/CW operation • Separate offset CW carrier crystal for clear, pure, CW note • ALC & ANL • Built-in 100 kc calibrator & antenna switching • Covers 50-52 mc with crystals supplied — total coverage 49.5-54 mc • Crystal filter SSB generator • Fixed station or mobile operation with the Heathkit HP-23 or HP-13 power supplies and SBA-100-1 mobile mount

SB-110
$320.00

NEW! Heathkit Communications Speaker—Matches SB-Series Gear!

SB-600 **$17.95** Available Late April



Room inside for SSB Power supply (HP-23).

Now You Can Have A Truly Professional Looking SB-Series Fixed Station . . . by completing your rig with this matching speaker. Plus, the SB-600 enclosure includes space for mounting the HP-23 AC Power Supply for the SB-100 or SB-110. Engineered to provide the best audio from any make equipment. The 8 ohm, 6″ x 9″ speaker features 300 to 3,000 cps response for maximum SSB readability. Cabinet dimensions: 10″ W x 6½″ H x 10½″ D.

SB-600, 5 lbs. **$17.95**

Heathkit Mobile Speaker Kit

HS-24
$7.00

Here's The Ideal Speaker For Use With All Heathkit Mobile Installations! This weatherproof 8 ohm, 4″ x 6″ oval speaker and rugged steel cabinet combination is especially designed for maximum communications intelligibility. Mounts most anywhere. Measures 6$\frac{7}{32}$″ W x 4¾″ H x 2½″ D. Complete with gimbal mounting bracket.

Kit HS-24, 4 lbs. **$7.00**

Amateur Band Transceivers

HEATHKIT®

The Heathkit SB-100 80 Through 10 Meter SSB Transceiver

SB-100 Features Engineering Unequaled In The Industry! . . . It includes all of the high-performance innovations you've read, heard, talked about, or experienced on the already famous SB-Series equipment. A 6 pole crystal lattice filter, producing a superior 2 to 1 shape factor and symmetrical pass band . . . TALC and Switch-board construction . . . the versatility of 180 watt P.E.P. input power . . . fixed or mobile power supplies . . . and many more Heath-engineered features make this the most up-to-date amateur band SSB transceiver on the market today.

Heathkit Switch-Board™ Technique Produces Better Than Factory Assembled Results! . . . virtually eliminates point-to-point wiring of tuning circuitry. The removable switch shaft makes the assembly of Switch-Boards easy . . . makes tuning coils readily accessible.

TALC™ (Triple Action Level Control) Sets New Standards For Automatic Level Control. Three separate circuits are combined in TALC to provide greater speech compression . . . allow for even more variation in speech level . . . and boost the performance of the SB-100 still higher.

Order The SB-100 For The Best Value In SSB Transceivers . . . Regardless! We invite comparison of the SB-100 specs with those of any other make of SSB transceiver. (Write to Heath for complete specs with schematic.) You will agree that the SB-100 is the best investment you can make in amateur radio equipment. (Recommended for hams with previous electronic or kit building experience.)

Kit SB-100, 23 lbs., $36 dn., $31 mo. **$360.00**
SBA-100-1, Mobile Mounting Kit, 6 lbs. **$14.95**
Kit HP-13, DC Power Supply, 7 lbs.
no money dn., $6 mo. **$59.95**
Kit HP-23, AC Power Supply, 19 lbs.
no money dn., $5 mo. **$39.95**

PARTIAL SB-100 SPECIFICATIONS—Receiver section: Sensitivity: Less than 1 microvolt for 15 db signal-plus-noise to noise ratio for SSB operation. **SSB selectivity:** 2.1 kc minimum at 6 db down, 5 kc maximum at 60 db down—2:1 nominal shape factor—6:60 db. **Power output:** 2 watts. **Spurious response:** Image and IF rejection better than 50 db. Internal spurious signals below equivalent antenna input of 1 microvolt. **Transmitter section: DC power input: SSB:** 180 watts P.E.P. continuous voice. **CW:** 170 watts—50% duty cycle. **RF power output:** 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm nonreactive load). **Output impedance:** 50 ohms to 75 ohms. **Oscillator feedthrough or mixer products:** 55 db below rated output. **Harmonic radiation:** 35 db below rated output. **Carrier suppression:** 50 db down from single-tone output. **Unwanted sideband suppression:** 55 db down from single-tone output at 1000 cps reference. **Third order distortion:** 30 db down from two-tone output. **Noise level:** At least 40 db below single-tone carrier. **General: Frequency coverage:** 3.5 to 4.0; 7.0 to 7.3; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 28.5; 28.5 to 29.0; 29.0 to 29.5; 29.5 to 30.0 (megacycles). **Frequency stability:** Less than 100 cps per hour after 20 minutes warmup from normal ambient conditions. Less than 100 cps for ±10% line voltage variations. **Modes of operation:** Selectable upper or lower sideband (suppressed carrier) and CW. **Dial accuracy—"Resettability":** Within 200 cps on all bands. **Electrical dial accuracy:** Within 400 cps after calibration at nearest 100 kc point. **Dial mechanism backlash:** Less than 50 cps. **Calibration:** 100 kc crystal. **Audio frequency response:** 350 to 2450 cps. **Power requirements:** 700 to 800 volts at 250 ma; 300 volts at 150 ma; —110 volts at 10 ma; 12 volts at 4.76 amps. **Cabinet dimensions:** 14⅞" W x 6⅝" H x 13⅜" D.

The Heathkit SB-110 6-Meter Transceiver

SB-110 Puts The Famous Heathkit SB-Series On 6 Meters. Now you can work six with a truly high-performance rig. Here's a 180-watt P.E.P. input SSB rig with "DC Band" stability, plus PTT or VOX control, single knob tuning, switch selected modes for either crystal controlled transceiver or crystal controlled transmit, variable receive operation and works CW or cross-mode for added versatility.

A Truly Great Heritage! The SB-110 provides full 6 meter transceiver operation with the same selectivity, stability, calibration, performance, and value already made famous by the Heathkit SB Series equipment for operation on 80-10 meters. Enjoy operating features that cannot be found in any other comparable transceiver on the market today! Discover the satisfaction of having a 6 meter signal with the real punch of SSB . . . of completing "solid copy" QSO's when band openings are minimal . . . of extending ground wave coverage . . . of owning and operating a high performance 6 meter rig you have assembled yourself.

Kit SB-110, 23 lbs. . . $32 dn., $27 mo. **$320.00**
Kit HP-13, DC Power Supply, 7 lbs. . . . no money dn., $6 mo. **$59.95**
Kit HP-23, AC Power Supply, 19 lbs. . . . no money dn., $5 mo. **$39.95**
Kit SBA-100-1, Mobile Mounting Kit, 6 lbs. **$14.95**

PARTIAL SB-110 SPECIFICATIONS—RECEIVER SECTION: Sensitivity: 0.1 uv for 10 db signal-plus-noise to noise ratio. **Selectivity:** 2.1 kc @ 6 db down, 5 kc max. @ 60 db down. **Image rejection:** 50 db or better. **IF rejection:** 50 db or better. **Audio output power:** 1 watt. **AGC characteristics:** Audio output level varies less than 12 db for 50 db change of input signal level (0.5 uv to 150 uv). **TRANSMITTER SECTION: DC power input:** SSB, 180 watts PEP; CW, 150 watts. **RF power output:** SSB, 100 watts PEP. CW, 90 watts (50 ohm non-reactive load). **Output impedance:** 50 ohm nominal with not more than 2:1 SWR. **Carrier suppression:** 55 db down from rated output. **Unwanted sideband suppression:** 55 db down from rated output @ 1000 cps & higher. **Distortion products:** 30 db down from rated PEP output. **Hum & noise:** 40 db or better below rated carrier. **Keying characteristics:** VOX operated from keyed tone using grid-block keying. **GENERAL: Frequency coverage:** 49.5 to 54.0 mc in 500 kc segments (50.0 to 52.0 mc with crystals supplied). **Frequency selection:** Built-in LMO or crystal control. **Frequency stability:** Less than 100 cps drift per hour after 20 minutes warmup under normal ambient conditions. Less than 100 cps drift for ±10% supply voltage variations. **Dial Accuracy:** Electrical, within 400 cps on all band segments, after calibration at nearest 100 kc point. Visual, within 200 cps. **Dial backlash:** No more than 50 cps. **Calibration:** Every 100 kc. **Power requirements:** High voltage, +700 v. DC @ 250 ma with 1% max. ripple. Low voltage, +250 v. DC @ 100 ma with .05% max. ripple. Bias voltage, —115 v. DC @ 10 ma with .5% max. ripple. Filament voltage, 12.6 v. AC/DC @ 4.355 amps. **Dimensions:** 14⅞" W x 6⅝" H x 13⅜" D.

Ⓐ Special SSB "Ham" Microphone

The Perfect Mike For Use With The SB-100, SB-110, or SB-400. Special response, 300 to 3,000 cps, favors voice frequencies for clear, sharp SSB communications. Mike stand has grip-to-talk switch with lock position. Hi-Z output. Rugged die-cast zinc case. Complete with wiring diagrams for use with any rig. Cables included.
HDP-21, 4 lbs. . . No money down, $5 mo. **$29.40**

Ⓑ Push-To-Talk Mobile Microphone

Here's A Longtime Favorite Mobile Mike! The GH-12 features a ceramic element with shaped response for voice frequencies—excellent for either AM or SSB communications. It's also ideally suited to the rugged work-out given to mobile equipment—stands up well even under the temperature extremes that sometimes occur in parked cars. Complete with cable, less connector.
Model GH-12, 2 lbs. **$6.95**

Ⓒ Universal Mobile Mounting Bracket For SB-100 & SB-110

Go Mobile With The SB-100 or SB-110! The SBA-100-1 permits easy installation of either transceiver on the transmission hump or under the dash. Heath-Engineered cantilever suspension provides firm support . . . allows quick plug-in of either transceiver (not interchangeable) in your car for quick transfer from fixed to mobile operation.
Kit SBA-100-1, 6 lbs. **$14.95**

World's Largest

Heathkit Solid-State Electronic Keyer

• Dependable solid-state circuitry • Speed range—15 to 60 words per min. Slow-speed option—10 to 20 wpm • Self-completing dashes • Solid-state switching—no relays to stick or chatter—no contact bounce to punch holes in characters • Built-in paddle—"feel" is adjustable to your fist during assembly • Adaptable to either right or left handed operators • Engineered to convert easily to semi-automatic operation if desired • Variable dot-space ratio • Hold switch for transmitter tuning • Built-in side-tone • Built-in transformer-operated power supply isolates the keyer from the power line • Fused for protection

Kit HD-10, 6 lbs., no money dn., $5 mo. **$39.95**

HD-10 SPECIFICATIONS—Keying: Speed range—15 to 60 wpm. Slow speed option—10 to 20 wpm. **Keying output:** Keyed line to chassis ground. **Voltage polarity:** Negative to ground only. **Maximum open circuit or spike voltage:** 105 volts. **Key-closed voltage:** 0.2 volts, max. **Key-closed current:** 35 milliamperes, max. **General: Audio:** Internal speaker or high impedance headphone jack. **Transistor complement:** (7) 2N407 PNP; (3) 2N2712 NPN; (1) 2N398A PNP. **Controls:** Off-Operate-Hold switch; Speed control; Dot-To-Space ratio control. **Rear panel connections:** Keyed line; receiver audio; battery +45 volts; battery +22½ volts. External key options: hand key, dash arm, dash, dot. **Power requirements:** AC operation, 105-125 V. AC, 50-60 cps. Battery operation, 45 volts with 22½ V. tap; 14 millamperes. **Dimensions:** 3¾" W x 4¼" H x 10½" D.

Heathkit HR-10 Amateur Band Receiver
An Excellent Performer For The Beginning Ham

• Amateur band coverage only for maximum stability & accuracy • Tunes SSB, AM, & CW on 80-10 meter bands • Lattice-type crystal filter for high selectivity • 100 kc crystal calibrator plugs in inside receiver enclosure • Superheterodyne with RF stage for extra sensitivity • Prebuilt, prealigned tuning unit for fast, simple assembly

A Fine Receiver Any Amateur Would Be Proud To Own! HR-10 includes an "S" meter, separate RF and AF gain controls, an accessory power socket, and BFO tuning. It has the solid stability you need for listening to SSB or working CW . . . the sensitivity you need to pull weak signals out of the "mud." The HR-10 will prove itself a real performer, whatever your test for receiver quality.

Kit HR-10, 20 lbs., no money dn., $8 mo. **$75.00**
Kit HRA-10-1, Plug-in 100 kc crystal calibrator, 1 lb. **$8.95**
Kit HS-24, Speaker, 4 lbs. (See page 34 for details). **$7.00**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

HR-10 SPECIFICATIONS—Frequency coverage: 80 through 10 meters. **IF frequency:** 1681 kc. **Sensitivity:** 1 uv for 10 db signal-to-noise ratio. **Image rejection:** 40 db or better. **Selectivity:** 3 kc at 6 db, 9 kc at 40 db. **Input impedance:** 50 to 75 ohm, coaxial. **Audio output impedance:** 8 or 500 ohm. **Tube complement:** 6BZ6, (2) 6EA8, 6BA6, 6BJ7, 6EB8, 6X4. **Power requirements:** 117 volts AC, 50/60 cycles, 50 watts. **Dimensions:** 13¾" W x 11½" D x 6½" H.

Heathkit DX-60A Phone & CW Transmitter . . .
Mate To The HR-10

• 90 watts phone or CW—80 through 10 meters • Neutralized 6146 final amplifier • Built-in low pass filter • Grid block keying—easy access to crystal sockets • May be run at reduced power for novice operation • Transmitter mate of the HR-10

Novice Or Old-Timer, Choose The DX-60A! If you're a novice, the DX-60A is right for you. Operate it at the required 75-watt maximum (crystal control) for novice class CW . . . and later when you get your general class phone license, go to VFO control and use the DX-60A's full 90 watts of power. (See the HG-10 VFO below, an excellent VFO for the DX-60A). No transmitter in this price range will offer you more.

Check These Advanced Features . . . a low-pass filter suppresses harmonic interference, a neutralized final amplifier for high stability, excellent grid block keying, switch selection of four crystal positions or external VFO for full coverage of amateur bands, and single-knob bandswitching. Compare! . . . you'll choose the Heathkit DX-60A.

Kit DX-60A, 24 lbs. . . (less crystals) . . . no money dn., $8 mo. . . **$79.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

DX-60A SPECIFICATIONS—Power input: 90 watts peak; controlled carrier phone, or CW. **Output impedance:** 50-75 ohm (coaxial). **Output coupling:** Pi-network. **Operation:** CW or AM phone—crystal or VFO control. **Band coverage:** 80 through 10 meters. **Power Requirements:** 105-125 V., 50-60 cps, 225 watts. **Dimensions:** 13¾" W x 11½" D x 6½" H.

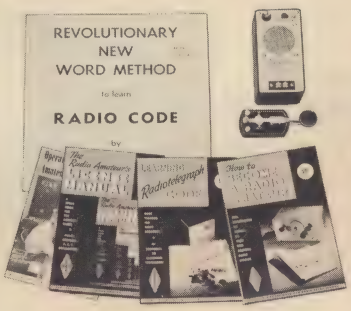
Heathkit VFO . . . For 80-2 Meters

HG-10
$34.95

• Perfect VFO for DX-60A transmitter • Will drive most other transmitters—provides 5 volts RMS output • Smooth vernier tuning has 28 to 1 ratio "Spot" switch for off-the-air tuning • Output 3.5 to 4 & 7 to 9 mc range

Now! . . . work VFO on all bands . . . enjoy the operating convenience of being able to QSY anywhere within the bands. Styled to match the DX-60A, the HG-10 will compliment any outfit. Rugged, stable design. Keys beautifully.

Kit HG-10, 12 lbs., no money dn., $5 mo. **$34.95**



Learn About Amateur Radio

Obtain Your FCC License Fast . . . Course includes 4 authentic American Radio Relay League handbooks: "How To Become A Radio Amateur"; "Radio Amateur's License Manual"; "Learning The Radio-Telegraph Code"; "Operating an Amateur Radio Station"; and code oscillator kit. **Plus** —3 records that teach code by revolutionary "word-method."

HDP-22, Amateur Radio Starter Group, 6 lbs., Save $3.00. . . . . **$15.95**
HDP-32, Code Records only, 2 lbs. **$9.50**
HDP-42, ARRL Books only (4), 2 lbs. **$2.00**
Kit CO-1, Oscillator plus Key only, 2 lbs. **$7.95**

Selection Of Amateur Radio Equipment

New! Heathkit HM-15 Reflected Power Meter

NEW LOW PRICE!
HM-15
$14.95

• Indicates forward or reflected power and SWR • Band coverage is 160 through 6 meters • Handles peak power of well over 1 kilowatt • Matches 50 or 75 ohm lines • Matches Heathkit SB-Series equipment • Easy to assemble

Heathkit Reflected Power Meter (SWR Meter) Shows Antenna/Transmission Line Match . . . enables you to design your antennas for maximum efficiency. HM-15 measures forward and reflected power for direct reading of percentage of forward and reflected power, and voltage-standing-wave-ratio (SWR) from 1:1 to over 3:1. Sensitivity control adjusts for full-scale readings at nominal transmitter output. Ideal for matching impedances between exciters and final amplifiers, or for designing multielement antennas.

Kit HM-15, 2 lbs. **$14.95**

HM-15 SPECIFICATIONS—Operation: Indicates percentage of forward and reflected power, and voltage standing wave ratio (SWR). **RF Power Handling Capability:** One kilowatt. **Input And Output Impedance:** 50 or 75 ohm. **Band Coverage:** 160 through 6 meters. **Meter:** 100 microamperes, full scale. **Dimensions:** 9¼" L x 3⅝" W x 2⅝" H.

New! Heathkit HD-15 Hybrid Phone Patch . . . More Features, Lower Price!

NEW LOW PRICE
HD-15
$24.95

• Features individual gain controls for receiver-to-line & line-to-transmitter audio level • VU meter to monitor audio levels • Operates with VOX or PTT • Convenient one-switch operation

Efficient Transfer Of Amateur Radio Communications To Telephone Lines With A Flip-Of-A-Switch . . . ideal for heavy SSB phone patch traffic. The HD-15 transfers audio to 600 ohm telephone lines with negligible hum or crosstalk. Operates with virtually all transmitters and receivers. Styled to match the new Heathkit SB series equipment. Use with 3 to 16 ohm speakers and Hi-Z or 600 ohm transmitter phone patch inputs.

The HD-15 Hybrid Phone Patch is a fun kit to build! . . . assembles in just one evening. It's the perfect complement to the well outfitted amateur station.

Kit HD-15, 3 lbs., no money dn., $5 mo. **$24.95**

HD-15 SPECIFICATIONS—Circuit: Telephone hybrid circuit. Allows voice control or manual operation. Single switch places unit in full operation. **Telephone Line Input Impedance:** Approximately 600 ohm. **Meter:** Standard VU meter for constant output monitoring and null depth indication. **Null Depth:** At least 30 db isolation between transmit and receive circuits. **Receiver Impedance:** Effective match from 3 to 16 ohm. **Transmitter Impedance:** 600 ohm or high impedance output. **Cabinet Size:** 9¼" L x 3⅝" W x 2⅝" H.

HW-29A
$44.95

Go VHF For Less Than $50.00 With Benton Harbor Lunch Boxes!

• Ideal for CAP, MARS, local net or emergency operations • Crystal controlled transmitter—5 watt input • HW-30 2-meter model capable of operation on new USCG Auxiliary frequency 143.28 mc.

Complete Transceivers . . . Include ceramic microphone, meter jack, and power cables for mobile operation. Use Heathkit GP-11 for mobile power. Crystals (not supplied) are in 8 mc range.

Kit HW-29A (6 meter), 9 lbs., no money dn., $5 mo. **$44.95**
Kit HW-30 (2 meter), 9 lbs., no money dn., $5 mo. **$44.95**
Kit GP-11, Mobile Power Supply, 6 lbs. **$16.88**

HM-10A
$34.95

Heathkit HM-10A "Tunnel Dipper"

One Of The Handiest Instruments A Ham Can Own. Here's the modern version of the grid-dip meter. The all solid-state tunnel diode oscillator covers 3 to 260 mc . . . indicates resonance with the circuit under test (coils, antennas, etc.) by a dip in the meter reading. Doubles as an absorption wave meter. Easy to build. Gear-drive tuning provides smooth frequency control. Coils are epoxy coated for durability, and color coded to match the dial scales. Less battery.

Kit HM-10A, 3 lbs., no money dn., $5 mo. **$34.95**

"Cantenna" Dummy Load

Make "On-The-Air" Transmitter Checks Without Creating Harmful Interference. Run up to a kw with less than 1.5 V.S.W.R. on 50 ohm input. Usable to 300 mc. Less oil.

Kit HN-31, 3 lbs. **$9.95**

HN-31
$9.95

PM-2
$12.95

Heathkit Handy RF Power Meter

Shows Relative Power Output Of Transmitter . . . for checkup and tuning. Samples the RF field near the transmitter antenna. Range: 100 kc-250 mc.

Kit PM-2, 2 lbs. **$12.95**

Heathkit Crystal Calibrator

For Calibrating Communications Receivers . . . provides accurate signals every 100 kc from 100 kc to over 54 mc. Uses 9 v. battery . . . NEDA type 1600. (Not included.)

Kit HD-20, 1 lb. **$14.95**

HD-20
$14.95

HDP-293
$4.00

Radio Amateur's Handbook

Latest Edition . . . covers all phases of amateur radio electronics, plus tube & transistor data.

HDP-293, 3 lbs. **$4.00**

Heath Malmstadt-Enke Laboratory

New! . . . Multi-Speed Chart Drive For Heath Malmstadt-Enke Servo-Chart Recorders And Recording pH Meter/Electrometer

• All solid-state electronics • Instantaneous selection of 21 accurate speeds from 5 seconds to 2 hours per inch (12 inches/minute to 0.5 inches/hour) —when using internal line frequency signal • Unlimited variation in speeds up to 12 inches per minute when using an external chart drive signal • 21-position chart drive switch features five rate scales—seconds per inch, minutes per inch, hours per inch, inches per minute, and inches per hour • All chart speeds are as accurate as 60 cps AC line signal, when using internal drive signal • Auxiliary input terminals enable the chart motor to be programmed by external chart-drive signals • Output signal for synchronizing experimental events or synchronizing other recorders • Can be installed in any Heath EUW-20A Servo-Chart Recorder or EUW-301 Recording pH Meter/Electrometer • Includes complete, detailed instruction manual, giving step-by-step procedure for installation in Heath recorders • Factory wired and tested

EUA-20-26
$89.00

Available Late April

New Heath Malmstadt-Enke Multi-Speed Chart Drive Sets New Standard For Laboratory Equipment . . . allows immediate selection of any one of 21 chart speeds from 12 inches per minute using internal signal (60 cps) to ½ inch per hour or an unlimited selection of chart speeds from 0 to 12 inches per minute (5 seconds/inch). This unique Heath Malmstadt-Enke innovation provides instantaneous switch selected changes on chart speed and is free from the backlash which is characteristic of gear-drive multispeed systems. Its pulse-type electronic circuitry enables other events to be synchronized with recorder readout (or the recorder to be operated in slave to the data system). Check out the specifications below.

EUA-20-26 Multi-speed Chart Drive, 4 lbs. **$89.00**

EUA-20-26 SPECIFICATIONS—Chart Speeds: 5 seconds to 2 hours per inch in 21 speeds, with internal signal. Any speed up to 5 seconds per inch with external signal. **External input:** Input terminals for external chart drive signals. **External signal requirements: Sine Wave;** 22 volts P-P min., 15-100 cps, 3 volts P-P min., 100 cps—10 kc. **Square Wave;** 3 volts P-P min., 0-10 kc. with 20 usec max rise & fall time. **Pulses;** 0-10,000 pulses per second—with minimum amplitude dependent on pulse duration. **Auxiliary output signal:** 4 v. P-P square wave, 20 usec rise time & 0.2 usec fall. **Auxiliary output impedance:** 68 ohms. **Controls:** 21-position Chart Speed Switch & External-Internal signal switch 32 diodes, 29 silicon transistors. **Power requirements:** 105-125 VAC 60 cps 30 watts.

Heath-Built Servo Chart Recorder . . . For Research & Education

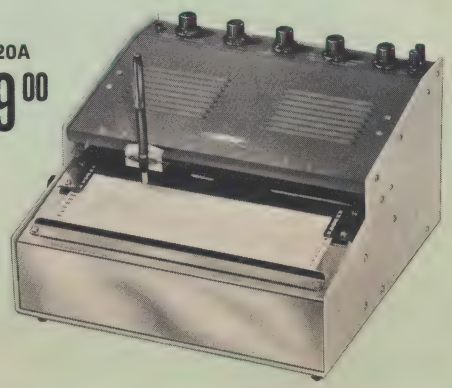
• Completely assembled, tested, ready to operate • Ideal for lab & school use • True potentiometric input on all ranges (10, 25, 50, 100 & 250 mv) • Plug-in 5-pin connectors for special ranges & modular plug-on accessory chassis • Input source resistance capability of greater than 100K ohms • Rapid chart advance, pen lift, paper tear-off guide • Excellent long-period stability

Can Be Used For "Read-Out" From A Multitude Of Experimental Set-Ups. Optional chart drive motors, or the multi-speed chart drive permit broad versatility to the available time scales, and the potentiometric input enables the Heath Servo Chart Recorder to be used with nearly all data outputs.

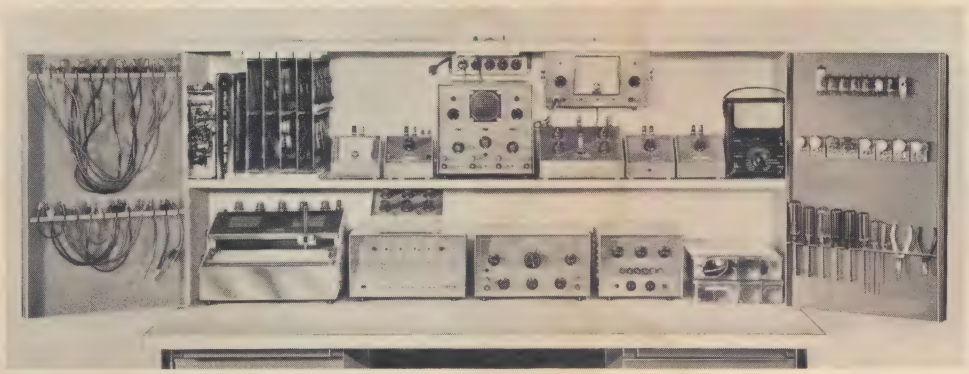
Send For Free Heath Malmstadt-Enke Laboratory Brochure . . . fully describes the Servo Chart Recorder as well as all other instruments of the basic lab.

EUW-20A, Chart Recorder, 23 lbs. **$199.00**
EUA-20-1, blank plug-in adapter chassis, 5 lbs. **$9.00**

EUW-20A
$199.00



Heath Malmstadt-Enke Instrumentation Laboratory



Here's A Complete Electronics Lab For Scientists And Engineers. All equipment is factory wired & tested. Provides a complete electronics adjunct to chemistry research or biochem lab . . . provides a complete university-level classroom unit for teaching electronics and instrumentation. Complete test & lab manual included.

EU-100A, 151 lbs. **$990.00**
EUP-22A, All-steel desk top cabinet, 105 lbs. **$130.00**

Free . . . Heath Malmstadt-Enke Laboratory Brochure

Describes the concept underlying Heath Malmstadt-Enke instrumentation. Gives full specifications and descriptions of the instruments in the basic Lab System.

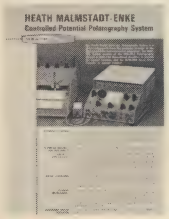
Electronics And Instrumentation

Heath Malmstadt-Enke Controlled Potential Polarography System

EUW-401
Complete Electronics
$480.00

• Includes all necessary electronic instrumentation for 2-electrode (conventional), 3-electrode (non-aqueous or high-resistance), manual polarography, and amperometric titrations • Provides schemes for qualitative & quantitative electrochemical analysis • May be used in both inorganic and organic chemistry—i.e., tests for traces of metallic ions in petroleum distillates, urine, etc., or for tests of purity from pesticides in dilute aqueous solutions • May be used for a multitude of highly sophisticated polarographic techniques when operated with suitable accessories • Completely assembled and tested • Includes detailed manual

An Outgrowth Of The Heath Malmstadt-Enke Concept Of Modular Electronics . . . the Heath Polarography Module EUA-19-2 couples by direct plug-in to the Malmstadt-Enke series Operational Amplifier EUW-19A, providing a highly versatile precision instrument for investigating polarographic chemistry.

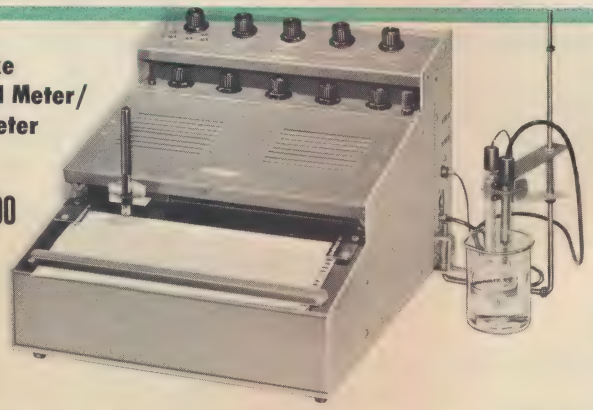


EUA-19-2 Polarography Module, 8 lbs. **$185.00**
EUW-19A Operational Amplifer, 22 lbs. **$135.00**
EUW-20A Chart Recorder, 23 lbs. **$199.00**
EUW-401 Complete Polarography System (consists of EUA-19-2, EUW-19A, EUW-20A), 53 lbs. **$480.00**

Free Brochure
Provides complete specifications of the EUW-401 System. Discusses the techniques of polarography. Briefly outlines experimental setups for various modes of polarography.

Heath Malmstadt-Enke Recording pH Meter/ Recording Electrometer

EUW-301
$300.00



For Classroom Use Or Educational Research . . . here's the perfect recording pH meter. Full scale spans of 1, 2, 5, 10, and 14 pH units (e.g.; shows full scale span of pH 4 to 5, or any other one pH unit from 0 to 14). Readable to 0.1% full scale. Repeatable to 0.5% full scale. Excellent readout for pH Stat, or control for automatic burettes.
Install The New Multi-Speed Chart Drive For A New High In Versatility! Virtually perfect stability of the pH Recorder, plus the new chart speeds available allow long period pH monitor such as pH monitor of lakes & streams, of biological processes, the growth of enzymes, as well as conventional titrations, etc.

EUW-301, pH Recording Electrometer, 32 lbs. (pH electrodes not included) . . . no money down, $28 month. **$300.00**
EUA-20-23 New Sargent Combination pH Electrode. **$38.00**
EUA-20-11, pH Module only, 12 lbs. (converts Heath EUW-20A Servo-Recorder to pH Recording Electrometer) . . . no money down, $12 month. **$125.00**

EUA-301-1, Parts Kit, 2 lbs. (chopper, three 5-prong plugs and back cover) to convert recorder in EUW-301 to standard EUW-20A chart recorder **$20.00**

Send For FREE Brochure!
A brochure describing the functions and applications of the EUW-301 pH Recording Electrometer in detail is yours FREE by simply dropping a note or card with your name & address to the Heath Company, Benton Harbor, Michigan 49023.

EUA-19-6
$149.00
Available
Mid-April

New Equipment For Polarography!
Heath Malmstadt-Enke
Dropping Mercury Electrode Apparatus

• Includes all electrodes for 3-electrode controlled potential polarography—dropping mercury electrode (less Hg°), calomel reference electrode, platinum counter electrode • Exceptionally versatile—can be used for 2 or 3-electrode polarography, controlled potential electrolysis, controlled current electrolysis, chronopoteniometry, and amperometric titrations with Dropping Mercury Electrode • Easy to set up • Simple to operate • Teflon® stop cock on mercury supply • Adjustable mercury height • Mercury head scale adjusts to read height directly in mm. • Spring loaded cell holder for quick change of samples—usable with a wide variety of sample containers • Complete facilities for nitrogen purging—includes micrometer nitrogen flow valve • High mechanical stability • Built-in plumb for rapid leveling • Built from heavy gauge aluminum with enamel finish to resist corrosion • Upper section (less base) can be removed and attached to any standard laboratory rack • Includes all cables and connectors (preassembled) for operation with the Heath Malmstadt/Enke EUW-401 Polarography System

EUA-19-6 Dropping Mercury Electrode Apparatus, 15 lbs. **$149.00**

Heathkit® Educational Instruments

EK-1
$19.95

Basic Electricity Kit

Students & Beginners! . . . Learn basic electronics as you build this handy DC Volt-Ohm-Milliammeter. Kit-textbook combination. You'll discover a whole new world of knowledge as you probe into the mysteries of electronics.

Kit EK-1 (Less batteries), 4 lbs. **$19.95**

EK-2A
$18.75

Basic Radio Course—2 Parts

Part I begins with elementary theory—ends with the completion of a sensitive regenerative receiver. Part II continues with "learn-by-doing"—concludes with a 2-band superheterodyne receiver (requires EK-1 VOM above or equivalent to complete all experiments).

Basic Radio Part I (EK-2A), 7 lbs. **$18.75**
Basic Radio Part II (EK-2B), 5 lbs. **$18.75**
Accessory cabinet for completed receiver, **AK-8,** 3 lbs. **$3.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

EK-3
$16.95

Basic Transistors . . .

This excellent "beginner" or "refresher" course reveals the "How" & "Why" of transistors. Probes into the nature of matter. You learn-by-doing as you build a two-transistor radio, wireless broadcaster, audio amplifier, test oscillator, and finally a 2-station intercom.

Kit EK-3, Basic Transistors, 4 lbs. **$16.95**

EF-1
"Text & Chassis"
$8.95

EF-1-4
"Text, Chassis & Instrument"
$39.95

"How To Understand & Use Your Vacuum Tube Voltmeter"

Learn theory, advantages, & applications of VTVM by "doing" with this kit-textbook course. Excellent for formal classes or self-teaching.

Kit EF-1, Text & special power supply (for VTVM owners), 3 lbs. **$8.95**
Kit EF-1-3 (EF-1 & IM-11 VTVM, pg. 44), 8 lbs., no money dn., $5 mo. **$32.50**
Kit EF-1-4 (EF-1 & IM-13 VTVM, pg. 44), 10 lbs., no money dn., $5 mo. **$39.95**
Manuals only for EF-1 (single copy). . . . **$5.00**
(10 or more). . . . . ea. **$3.00**

EF-2
"Text & Chassis"
$9.95

EF-2-3
"Text, Chassis & Instrument"
$66.95

"How To Understand & Use Your Oscilloscope"

Here's a stimulating course which is neither over the heads of beginners nor on too low a level for professionals. Big 169-page text is a valuable reference book.

Kit EF-2, Text, chassis & parts, 4 lbs. . . **$9.95**
Kit EF-2-3 (EF-2 & IO-21 Oscilloscope, pg. 43), 16 lbs., no money dn., $7 mo. **$66.95**
Kit EF-2-4 (EF-2 & IO-12 Oscilloscope, pg. 43), 28 lbs., no money dn., $9 mo. **$87.95**
Manuals only for EF-2 (single copy). . . . **$5.00**
(10 or more). . . . . ea. **$3.00**

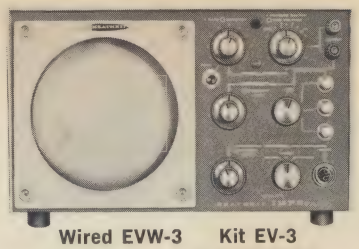
"How To Understand & Use Your Signal Generator"

EF-3
"Text & Chassis"
$11.95

EF-3-3
"Text, Chassis & Instrument"
$61.95

Learn the proper use of signal generators through this kit-text-book course. Includes test chassis with solderless "spring-clip" components plus valuable reference text.

Kit EF-3, Text, chassis & parts, 4 lbs. . . **$11.95**
Kit EF-3-2 (EF-3 & IG-102 RF Signal Generator, pg. 45), 10 lbs., no money down, $5 mo. **$37.95**
Kit EF-3-3 (EF-3 & IG-82 Sine-Square Audio Generator, pg. 46), 18 lbs. . .
no money dn., $7 mo. **$61.95**
Manuals only for EF-3 (single copy). . . . **$5.00**
(10 or more). . . . . ea. **$3.00**



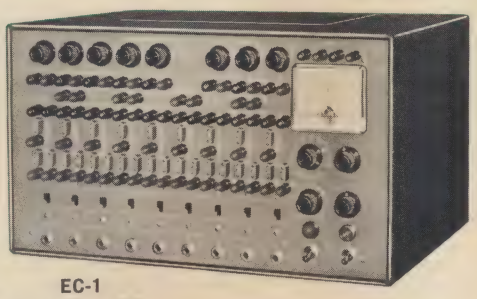
Wired EVW-3 $265.00
Kit EV-3 $175.00

Heathkit IMPScope Displays Electrical Phenomena Of Muscles & Nerves . . . Brings Modern Instrumentation To School Biology & Physiology Labs

• Brings the most recent physiological instrumentation to the classroom • Shows human EKG, frog EKG, nerve & muscle action potentials • Stimulates new insight • Readily comprehendable—even by high school and junior high students • A high-gain oscilloscope with built-in stimulator • Not intended for medical diagnostic use

Kit EV-3, 27 lbs. . .
no money down, $17 month. **$175.00**
Assembled EVW-3, 28 lbs. . .
no money down, $23 month. **$265.00**
Export model available for 115/230 VAC, 50-60 cps; write for prices.
EVA-3-1, Accessory Package: Includes nerve chamber, vector dolly, plethysmograph, frog electrodes & manual of instructions.
4 lbs. **$35.00**
EVW-3-1, Factory Assembled Accessories,
3 lbs. **$50.00**

Send For Free Brochure! Describes IMPScope, including full specifications. Discusses applications such as Human EKG, Frog EKG, Frog Sciatic Nerve Impulse, and many more.



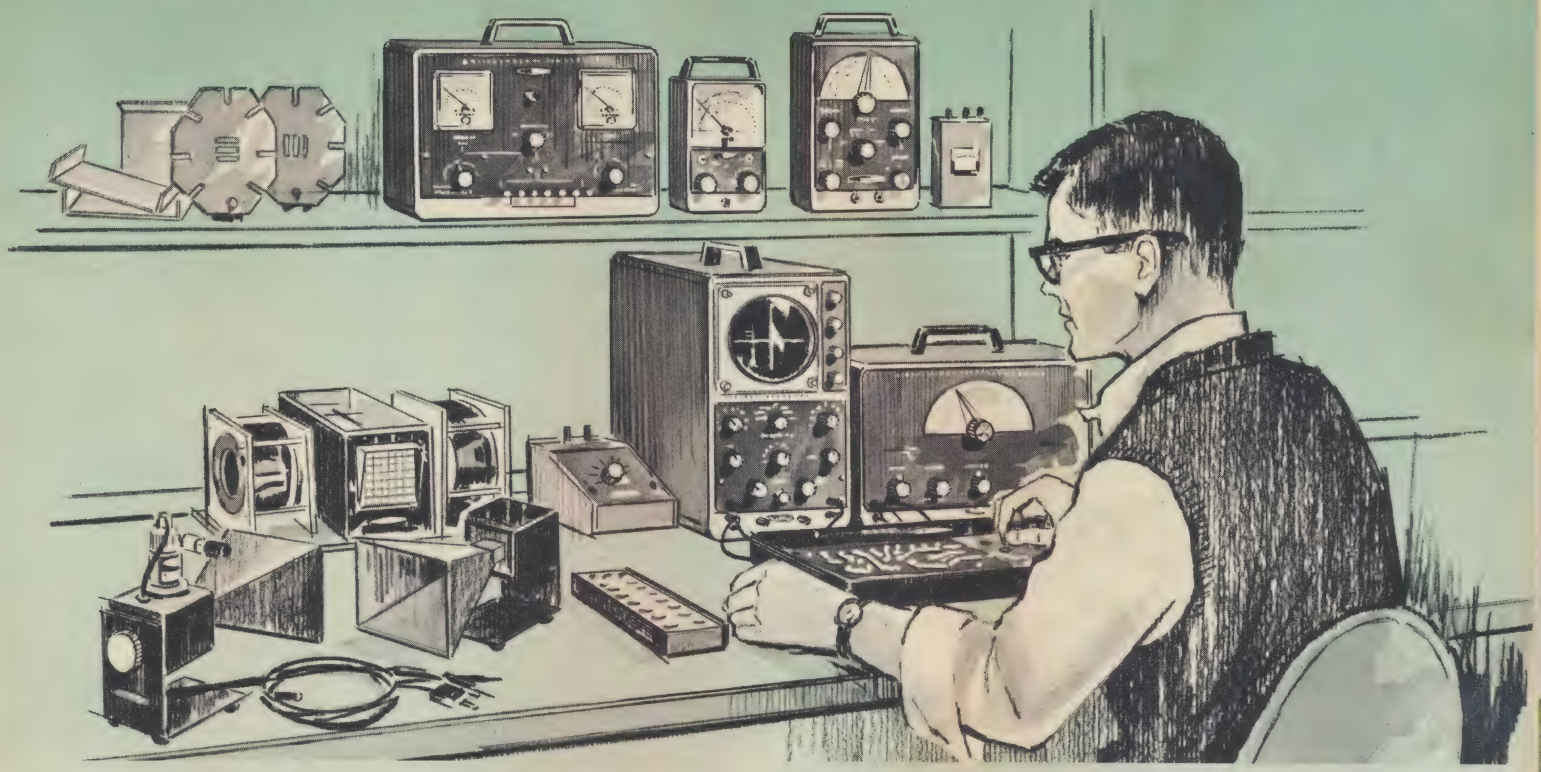
EC-1
$199.95

Heathkit Educational Electronic Analog Computer

Handles Scores Of Computer Problems! Adds, subtracts, multiplies, divides . . . solves problems as complex as two simultaneous 2nd order differential equations. Features 9 DC amplifiers, 3 initial condition power supplies, and 5 coefficient potentiometers. Provisions for balancing without removing problem setup.

Kit EC-1 . . . 48 lbs.,
no money dn., $19 mo. **$199.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Berkeley Physics Laboratory... Now With New Part B Instrumentation



Berkeley Physics Laboratory...Now With Parts A & B

Heath, Manufacturer Of Test Instruments & Materials As Used At Berkeley . . . now provides complete instrumentation facilities for outfitting Berkeley-type college physics laboratories. One basic Heath Berkeley Physics Laboratory station includes all the instruments needed by two student groups to perform all of the experiments of the Berkeley course. Special component groups for Parts A, B & C, of the course can be supplied separately as they continue to become available. Order the instruments, plus the components for Parts A & B for initial outfitting.

A Modern And Complete Lab System . . . The Berkeley Physics Laboratory Part A consists of six high quality test instruments and two laboratory component sets plus battery set. Each instrument is rated for professional research and testing and will provide classroom experience comparable to the modern electronics or research laboratory. The component sets, test chassis and cathode ray tube with deflection coils, are up to date in every respect, and reflect the leadership in electronics and instrumentation gained by Heath. All units meet the instrumentation and power requirements for the Berkeley Physics Laboratory.

Accurate, Dependable Data Starts Here . . . The Heath components for Part B of the Berkeley Physics Laboratory are designed for efficiency and practicality. Large microwave horn antennas give "workable" strength to signals. The klystron is readily available (should replacement ever be necessary). The delay line, housed in a sturdy enclosure, features banana-jack plug-in for quick, sure electrical contact. And standard small parts permit "open-ended" experiments at very low cost.

Complete Specifications On Each Instrument & Component . . . are shown in the FREE Berkeley Physics Laboratory brochure supplied by Heath. The Berkeley Physics Laboratory Manual is available from McGraw-Hill Book Co. and Heath Co. And only Heath offers a complete instrumentation manual (The Heath Berkeley Physics Instrumentation Manual), showing both schematic and pictorial wiring diagrams for Berkeley Laboratory experimental setups, as well as complete descriptions of each instrument . . . write for this valuable manual!

Part A, Order Nos. 595-764 & 7012P246 . . . . . $2.00
Part B, Order Nos. 595-812 & 7012P297 . . . . . $2.00

Kit EP-100A, complete 2-student lab station with Part A, 110 lbs. **$399.00**
Assembled EPW-100A, complete 2-student lab station with Part A, 110 lbs. **$559.00**

Kit EP-100B, complete 2-student lab station with Part B, 100 lbs. **$439.00**
Assembled EPW-100B, complete 2-student lab station with Part B, 100 lbs. **$599.00**

Ⓐ **Laboratory 5" Oscilloscope**
Kit IO-12S $79.95
Assembled IOW-12S $134.95

Ⓑ **Cathode-Ray Tube & Deflection Coil Set**
Includes binder & lab manual for Part A, Assembled EPW-24, 33 lbs. . $115.00

Ⓒ **RF Signal Generator**
Kit IG-102S $30.00
Assembled IGW-102S $60.00

Ⓓ **Regulated Power Supply**
Kit IP-32 . . . . . $56.95
Assembled IPW-32 . . . . . $84.95

Ⓔ **Sine-Square Wave Generator**
Kit IG-82 . . . . . $51.95
Assembled EUW-27 . . . . . $94.00

Ⓕ **Transistorized Power Supply**
Assembled EUW-17.
0-35 VDC. $20.00

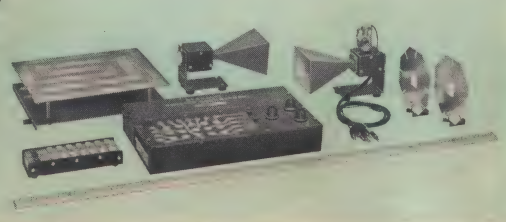
Ⓖ **Vacuum Tube Voltmeter**
Kit Model IM-11 . . . . . $24.95
Assembled IMW-11 . . . . . $39.95

Ⓗ **Test Chassis And Small Parts**
Includes binder & lab manual for Part A. Assembled.
EPW-14, 9 lbs. $60.00

EPA-10-1 Battery Set For Berkeley Physics Lab (Not Shown)
Consists of one 0–22½–45 V. battery & one 0–1½–3–4½–6–7½ V. battery. 2 lbs. $5.00

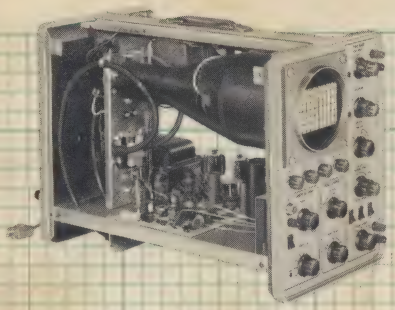
New Part B Accessories . . .
Order For April Delivery

Test Chassis & Accessories, Part B. Assembled EPW-15, 14 lbs. $125.00
Microwave Transmitter And Receiver Set, Part B. Assembled EPW-25, 8 lbs. . . . . $115.00. **Battery Set,** Part B. Not shown. EPA-10-2, 2 lbs. $5.00



SEND FOR FREE NEW BROCHURE . . . fully describes instruments & components.

Heath Research . . . Creating Innovations



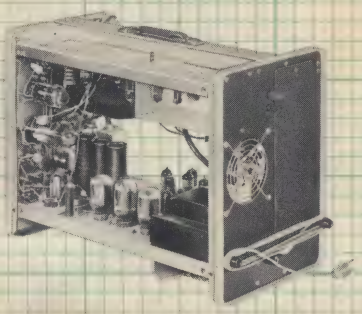
Sharpest Trace—assured by 4,250v. accelerating potential and high-nickel alloy CRT shield. **Matched, Magnetic-Core Delay Lines**—precision, cable type, for fast rise-time pulse work.

Rear Access Door—for direct plate connections. **Circuit Breaker**—for complete protection. **Z-Axis Terminals. 3-Wire Line Cord**—with holders. **Fan Cooling**—with blade guard.

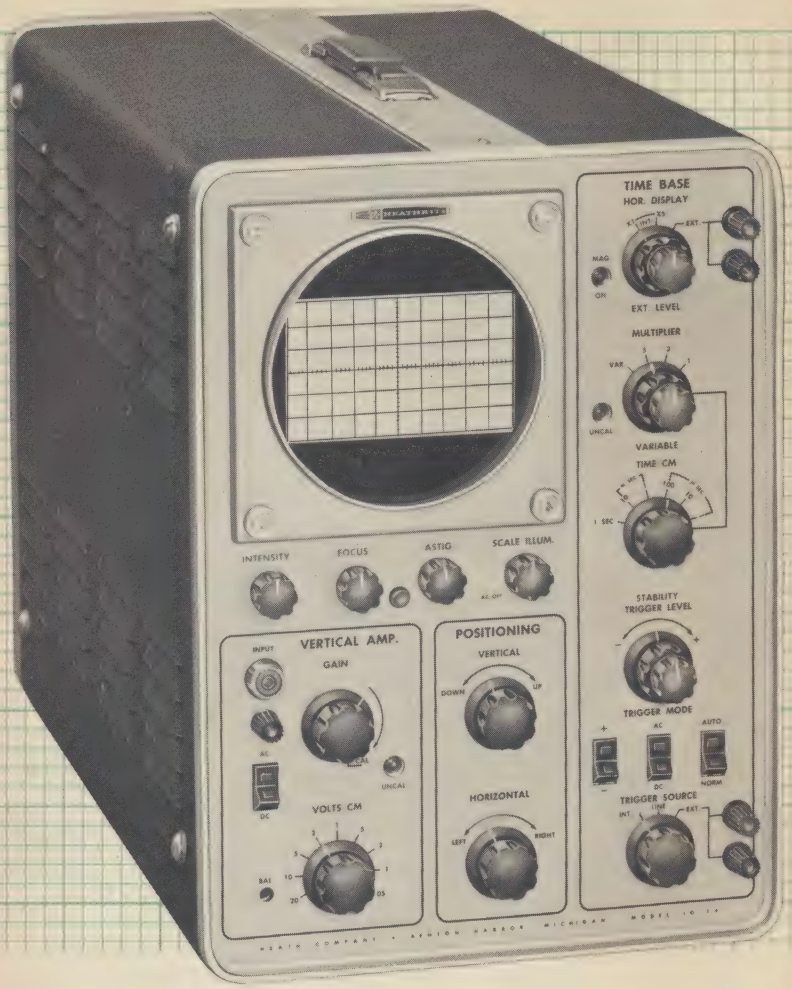
THROUGH HEATH NEW RESEARCH

Kit IO-14
$299.00
Available Mid-April

Assembled IOW-14
$399.00
Available Late May



Easy To Build—5 circuit boards and wiring harness. **Rugged**—heavy-duty transformer—forced-air cooling—"U" girder, all-aluminum construction for rigidity.



NEW Heathkit IO-14 Professional DC Oscilloscope Sets A New Precedent For Performance And Value In Precision Test Instruments

Eighteen Years Ago Heath Broke The Price Barrier On Oscilloscopes With A Low-Cost Scope For Hams, Hobbyists, And Service Technicians. Now Heath Breaks The Price Barrier Again! . . . With A Precision, Fast-Response, Triggered Sweep, Delay Line Oscilloscope For The Serious Experimenter, Industrial Or Academic Laboratory, And Medical Or Physiology Research Laboratory.

• A high stability 5" DC oscilloscope with triggered sweep • DC to 8 mc bandwidth and 40 nanosecond rise time • Vertical signal delay through high linearity delay lines—capable of faithful reproduction of signal waveforms far beyond the bandwidth of the scope • Calibrated vertical attenuation • Calibrated time base • Forced air cooling • Input for Z axis modulation • Input for direct access to vertical deflection plates • Easy circuit board construction & wiring harness assembly • Components are packaged separately for each phase of construction • Easy to align • Fulfills many production and laboratory requirements at far less cost than comparable equipment—particularly scopes capable of fast-rise waveform analysis • No special order for export version required—wiring options enable 115/230 volt, 50-60 cycle operation

Here Is A Truly Sophisticated Instrument . . . designed with modern circuitry, engineered with high quality, precision-tolerance components, and capable of satisfying the most critical demands for performance. The IO-14 features precision delay-line circuitry to allow the horizontal sweep to trigger "ahead" of the incoming vertical signal. This allows the leading edge of the signal waveform to be accurately displayed after the sweep is initiated. What is more, the IO-14's delay line is capable of reproducing sharp rise time signals far beyond the high frequency limitations of the oscilloscope. This assures the utmost ability for critical analysis of signal waveform characteristics . . . right up to the limits of the published specifications.

The IO-14 Provides Features You Expect Only In High Priced Oscilloscopes. For example, a calibrated vertical attenuator, a 5X sweep magnifier, and a magnifier indicator lamp . . . external sweep input and external trigger input . . . and many others, including an accurately engraved graticule with variable intensity lighting for optimum results in 'scope photography.

Precision Small Parts Are Used Throughout. Switches are quality, ball-detent type. All major control potentiometers are precision, high-quality sealed components. All critical resistors are 1% precision. And circuit boards are low-loss fiber glass laminate.

Built For Continuous Use . . . Rugged Abuse. The IO-14's cabinet is heavy gauge aluminum. The chassis and components are well supported structurally. The CR tube is shielded against stray magnetic fields, and forced air ventilation allows the IO-14 to be operated continuously under the demands of industrial use. Even the power transformer is husky, well rated, and constructed with a copper band enclosing the windings & iron to limit the external magnetic field. Here is a scope that's built to "take it."

Order The IO-14 For The Ultimate Value In Oscilloscopes.

Kit IO-14, 45 lbs. . . no money dn., $28 mo. **$299.00**
Assembled IOW-14, 45 lbs. . . $40 dn., as low as $23 mo. **$399.00**

Kit IOA-14-1, Scope Probe. Features: Switch selection of direct or X10 attenuation, adjustable trimmer capacitor to match IO-14 input, "squeeze-to-grip" tip. Available soon.

IO-14 SPECIFICATIONS—(Vertical) Sensitivity: 0.05 v/cm AC or DC. **Frequency response:** DC to 5 mc, —1 db or less; DC to 8 mc, —3 db or less. **Rise time:** 40 nsec (0.04 microseconds) or less. **Input impedance:** 1 megohm shunted by 15 uuf. **Signal delay:** 0.25 microsecond. **Attenuator:** 9-position, compensated, calibrated in 1, 2, 5 sequence from 0.05 v/cm. **Accuracy:** ±3% on each step with continuously variable control (uncalibrated) between each step. **Maximum input voltage:** 600 volts peak-to-peak; 120 volts provides full 6 cm pattern in least sensitive position. **(Horizontal) Time base:** Triggered with 18 calibrated rates in 1, 2, 5 sequence from 0.5 sec/cm to 1 microsecond/cm with ±3% accuracy or continuously variable control position (uncalibrated). **Sweep magnifier:** X5, so that fastest sweep rate becomes 0.2 microseconds/cm with magnifier on. (Overall time base accuracy ±5% when magnifier is on.) **Triggering capability:** Internal, external, or line signals may be switch selected. Switch selection of + or — slope. Variable control on slope level. Either AC or DC coupling. "Auto" position. **Triggering requirements:** Internal; ½ cm to 6 cm display. **External:** 0.5 volts to 120 volts peak-to-peak. **Horizontal input:** 1.0 v/cm sensitivity (uncalibrated) continuous gain control. Bandwidth: DC to 200 kc ± 3 db. (General) 5ADP31 or 5ADP2 Flat Face C.R.T. interchangeable with any 5AD or 5AB series tube for different phosphor characteristics. 4250 V. accelerating potential. 6 x 10 cm edge lighted graticule with 1 cm major divisions & 2 mm minor divisions. **Power supply:** All voltages electronically regulated over range of 105-125 VAC or 210-250 VAC 50/60 cycle input. Z Axis Input provided. DC coupled CRT unblanking for complete retrace suppression. **Power requirements:** 285 watts. 115 or 230 VAC 50-60 cps. **Cabinet dimensions:** 15" H x 10½" W x 22" D. includes clearance for handle and knobs. **Net weight:** 40 lbs.

In Electronics For Nearly Two Decades

Heathkit "Extra-Duty" Wide-Band 5" Oscilloscope!

• Full 5 mc bandwidth for color TV servicing • Heath patented sweep circuit—10 cps to 500 kc • Push-pull vertical & horizontal output • Two circuit boards & wiring harness for fast, easy assembly • Available kit or wired

Thousands In Use Across The Nation! Service shops, laboratories, schools, industry and home workshops at home & abroad attest to its fine performance. Boasts clear, sharp pattern displays . . . excellent linearity and lock-in characteristcs . . . wide band amplifiers . . . peak-to-peak calibration reference . . . automatic sync circuit . . . Z-axis input . . . positive trace position controls . . . and much more for versatile performance.

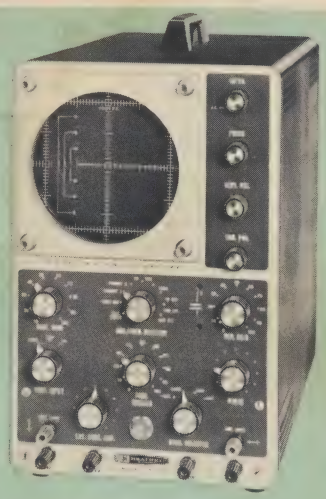
Kit IO-12, 24 lbs., no money dn., $8 mo. **$79.95**
Assembled IOW-12, 24 lbs., no money dn., $13 mo. **$134.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

See page 40 for combination offer with EF-2 Applications Course. **$87.95**

IO-12 SPECIFICATIONS—Vertical Sensitivity: 0.025 volts RMS per inch at 1 kc. **Frequency response (referred to 1 kc level):** ±1 db 8 cps to 2.5 mc: +1.5 to —5 db, 3 cps to 5 mc; response at 3.58 mc, —2.2 db. **Rise time:** .08 microseconds or less. **Input impedance:** (AT 1 KC) 2.7 megohms at X1, 3.3 megohms at X10 and X100. **Horizontal sensitivity:** 0.3 volts RMS per inch at 1 kc. **Frequency response:** ±1 db 1 cps to 200 kc; ±3 db 1 cps to 400 kc. **Input impedance:** 4.9 megohms at 1 kc. **Sweep generator:** Range—10 cps to 500 kc in five steps, variable, plus any 2 switch-selected preset sweep frequencies in this range. **Synchronizing:** automatic lock-in circuit using self-limiting synchronizing cathode follower. **Power requirements:** 105-125 volts 50/60 cycles AC at 80 watts; fused. **Dimensions:** 14⅛" H x 8⅝" W x 16" D.

Kit **$79.95**

Wired **$134.95**



IO-10 **$94.95**

Heathkit "Space-Saver" 3" DC Oscilloscope . . . Ideal For AC Or DC Applications!

• Identical DC or AC coupled vertical & horizontal amplifiers • DC to 200 kc bandwidth • Recurrent sweep generator, 5 cps to 50 kc in four ranges • Small, compact, easy to carry

Excellent Where Extremely Low Sweep Rates Are Desired! Features front-panel mounted external capacitance binding posts for lower sweep rates. Ideal for tests "on" or "away" from the test bench. Serves many applications in medical and industrial fields as well as general service work. Other features include 3RP1 CR tube, special-alloy CR tube shield to minimize trace distortion, regulated power supply, astigmatism control, and less than 5° phase-shift between channels.

Kit IO-10, 16 lbs., no money dn., $10 mo. **$94.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IO-10 SPECIFICATIONS—(Vertical and horizontal channels identical): Bandwidth; DC to 200 kc (2 db point). **Sensitivity:** 0.1 V (peak-to-peak) per ¼" (uncalibrated). **Attenuator:** 3-position, compensated type. **Gain control:** Continuously variable. **Input impedance:** 3.6 megohms shunted by 35 mmf. **Coupling:** Either AC or DC, switch-selected. **Relative phase shift between channels:** Less than 5°. **Sweep generator (Recurrent type):** Linear saw-tooth produced by multivibrator type generator covering 5 cps to 50 kc in four overlapping ranges. "External capacitance" binding post for lower sweep rates. **Sync provision:** Either internal or external, switch-selected. **Power requirements:** 105-125 V 50-60 cycle AC at 100 watts max. **Dimensions:** 7⅝" H x 4⅝" W x 11" D.

IO-21 **$58.95**

Heathkit "General Purpose" 3" Oscilloscope . . . An Ideal "First" Scope!

• Push-pull vertical & horizontal amplifiers • Wide range sweep—20 to 100,000 cps • Automatic sync • Retrace blanking • Clean open circuit layout for easy assembly

Compact . . . Lightweight . . . Versatile! Fills hundreds of daily requirements in servicing! Ideal for home workshop, ham shack, or an extra scope for all-around use . . . perfect for students or beginners just starting in electronics. Other features include input sensitivity of .25 volts RMS/inch peak-to-peak deflection at 1 kc; focus & astigmatism control for sharp, fine trace; well-rated power supply & special alloy neck shield for 3RP1 CR tube to minimize trace distortion.

Kit IO-21, 12 lbs., no money dn., $6 mo. **$58.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

See page 40 for combination offer with EF-2 Applications Course.

IO-21 SPECIFICATIONS—(Vertical and horizontal amplifiers identical): Frequency response: ±2 db, 2 cps to 200 kc. **Sensitivity:** .25 volts RMS/inch P-P deflection at 1 kc. **Input impedance:** 10 megohms shunted by 20 uuf. (Direct connection to vertical CRT plates on rear panel). **Sweep generator:** Range, 20-100,000 cps. Automatic sync. retrace blanking. **Tube complement:** (1) 3RP1 (CR tube), (4) 12AU7 (deflection amplifiers), (1) 12AX7 (sweep generator), (1) 6x4 (LV rectifier), (1) 1V2 (HV rectifier). **Controls:** Gain controls, Horizontal & Vertical; Centering controls, Horizontal & Vertical; Frequency Vernier; Horizontal Input, Sweep Range switch. (Focus and Astigmatism controls mounted on chassis). **Power requirements:** 105-125 volts AC, 50-60 cycle, 40 watts. **Dimensions:** 9½" H x 6½" W x 10" D.

Scope Demodulator Probe Kit

Adds versatility to oscilloscope applications by permitting visual observation of the modulation envelope waveform of RF and IF signals. Useful in both radio and TV servicing in checking for distortion and presence or absence of modulation. Functions as an AM detector . . . passes only modulation of signal. Voltage limits are 30 volts RMS, 500 volts DC.

Kit 337-C, 1 lb. **$3.50**
Assembled 337W-C, 1 lb. **$4.50**

Low-Capacitance Oscilloscope Probe Kit

An essential aid for high frequency work! The PK-1 minimizes loss of gain, circuit loading or distortion due to overloading of scope input. A switch on the probe body provides direct or X10 attenuated operation and an adjustable trimmer capacitor provides proper match to scope input. Kit includes an assortment of connectors to match most oscilloscope terminals.

Kit PK-1, 1 lb. **$4.95**

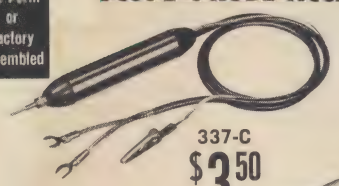
Heathkit Electronic Switch Kit

Extends oscilloscope operation by permitting simultaneous observation of two different signals on CR tube screen. Produces both signals alternately at any one of four switching rates. Position control allows superimposing or separating signals for comparison purposes. ±1 db from 0 to 100 kc.

Kit ID-22, 7 lbs. **$23.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

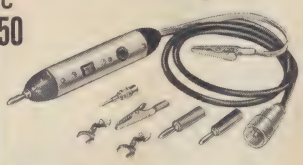
SCOPE PROBE ACCESSORIES

Kit Form or Factory Assembled



PK-1 **$4.95**

337-C **$3.50**



ID-22 **$23.95**

HEATHKIT®

Engineered For Quality . . .

Price Is Just One Reason Why This Is The World's Most Popular VTVM

• One probe makes all measurements • 7 AC, 7 DC, 7 Ohms ranges • Easy to read, sensitive 4½" 200 ua meter • 1% precision resistors • Extended frequency response ±1 db 25 cps to 1 mc • Measures RMS and Peak-to-Peak • Easy, stable circuit board construction

It's true that the Heathkit IM-11 costs just 45c more than its predecessor of 15 years ago, but it also embodies numerous circuit refinements and improvements which make it a highly accurate and dependable instrument for any phase of electronic measurement. Just compare its features and specifications. Test leads and probe are included, but not the battery. Order your IM-11 today, find out why hundreds of thousands are in use the world over.

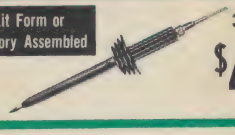
Kit IM-11, 5 lbs., no money dn., $5 mo. **$24.95**
Assembled IMW-11, 5 lbs., no money dn., $5 mo. **$39.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.
See page 40 for combination offer with EF-1 Applications Course. No money dn., $5 mo. . **$32.50**

IM-11 SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale. **AC peak-to-peak:** 0.4, 14, 40, 140, 400, 1400, 4000. **Resistance:** 10 ohm center scale x1, x10, x100, x1000, x10k, x100k, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. **Meter:** 4½" 200 ua movement. **Multipliers:** 1% precision type. **Input resistance DC:** 11 megohms (1 megohm in probe) on all ranges. **Circuit:** Balanced bridge (push-pull) using twin triode. **Accuracy:** DC ±3%, AC ±5% of full scale. **Frequency response:** ±1 db 25 cps to 1 mc (600 ohm source). **Tubes:** 12AU7, 6AL5. **Battery requirements:** 1.5 volt, size "C" flashlight cell (not included). **Power requirements:** 105-125 volt 50/60 cycle AC, 10 watts. **Dimensions:** 7⅜" H x 4-11/16" W x 4⅛" D.

Kit
$24.95

Wired
$39.95

Kit Form or Factory Assembled



336 **$4.50**

30,000 Volt DC High Voltage Probe

Extends DC ranges of any 11-megohm VTVM to 30,000 volts for TV service work and other high voltage applications.

Kit 336, 1 lb. **$4.50**
Assembled 336W, 1 lb. **$5.50**

Heathkit "Service Bench" VTVM . . . Professional Features & Performance!

Kit
$32.95

Wired
$49.95

Engineered Right, Shaped Right, Priced Right For "In-Shop" Servicing! Easy-to-read 6" 200 ua meter features multi-color scales with separate 1.5 & 5 v. AC scales. No more confusing tangle of test leads, thanks to single AC/Ohms/DC test probe. Simple to operate . . . just a function selector and range selector, separate Zero & Ohms adjust controls. All calibration controls accessible from front panel. Available kit or factory assembled.

Kit IM-13, 7 lbs., no money dn., $5 mo. **$32.95**
Assembled IMW-13, 8 lbs., no money dn., $5 mo. **$49.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.
See page 40 for combination offer with EF-1 Applications Course.

IM-13 SPECIFICATIONS—Meter scales DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale (1.5 and 5 volt AC ranges read on separate scales). **Ohmmeter:** Scale with 10 ohm center x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures 1 ohm to 1000 megohms with internal battery. **Dividers:** 1% precision type. **Meter:** 6" 200 ua movement. **DC Input resistance:** 11 megohms (1 megohm in probe) on all ranges. **AC Input impedance:** 1 megohm shunted by 40 uuf (measured at input terminals). **Circuit:** Balanced bridge (push-pull) using twin triode. **Accuracy:** DC ±3%, AC ±5% of full scale. **Frequency response:** ±1 db 25 cps to 1 mc (600 ohm source). **Battery:** 1.5 volt size "C" flashlight cell. **Power requirements:** 105-125 volts 50/60 cycle AC 10 watts. **Dimensions:** 5" H x 12-11/16" W x 4¾" D.

• Measures AC volts, DC volts, Resistance & DB • Separate 1.5 & 5 volt AC scales for high accuracy • Gimbal bracket for easy under-shelf, bench top or wall mounting • Tilts to any angle for best viewing • Big 6" 200 ua meter • Single test probe for operating convenience • 1% precision resistors

Kit Form or Factory Assembled

309-C **$3.50**

Etched Circuit RF Probe

Use with any 11-megohm VTVM to extend RF measurements up to 250 megacycles.

Kit 309-C, 1 lb. **$3.50**
Assembled 309W-C, 1 lb. **$4.50**

Heathkit 20,000 Ohms/Volt VOM... Portable, Highly Accurate!

MM-1
$29.95

• Measures voltage, current & resistance • 35 meter ranges on 2-color scale • Sensitive 50 microampere 4½" meter • 1% precision resistors for high accuracy • Polarity reversing switch —eliminates transferring test leads • Molded plastic case

Ideal Meter For All-Around Service Applications! Provides wide voltage, current, resistance & db ranges to cover virtually any service requirement. Battery power, compact size make it equally useful for field or test bench applications. Test leads included. Less batteries.

Kit MM-1, 5 lbs., no money dn., $5 mo. **$29.95**

MM-1 SPECIFICATIONS—Sensitivity: 20,000 ohms/volt DC, 5,000 ohms/volt AC. **Range AC & DC volts:** Full scale, 1.5, 5, 50, 150, 500, 1500, 5000. **Direct current:** 150 microamperes, 15, 150, 500 milliamperes, 15 amperes. **Ohmmeter:** 0.2 ohms to 20 megohms in three ranges. **Decibels:** —10 to +65 db. **Resistors:** 1% precision type. **Accuracy:** ±3% of full scale. **Controls:** Range switch, Output—AC—DC—reverse DC switch. Ohms adjust control. **Batteries:** 1 type "C" cell, 4 penlight cells. **Dimensions:** 7½" x 5½" x 4".

For Precision AC Work, Choose This Heathkit Laboratory AC VTVM!

Kit
$33.95

Wired
$52.95

• 10 voltage ranges—0.01 to 300 volts RMS full scale • Extended frequency response, ±1 db from 10 cps to 500 kc • 10 megohm input impedance for high accuracy • Calibrated DB scale for audio measurements

Accurate Low-Level AC Measurements! Measures AC voltages from 1 millivolt to 300 volts RMS with excellent accuracy. VU-type ballistic damping of meter movement, high input impedance, wide frequency response, high sensitivity, & the excellent stability designed into this instrument assure outstanding results in every application. Order yours now!

Kit IM-21, 5 lbs., no money dn., $5 mo. **$33.95**
Assembled IMW-21, 5 lbs., no money dn., $6 mo. **$52.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IM-21 SPECIFICATIONS—Frequency response: ±1 db 10 cps to 500 kc, ±2 db 10 cps to 1 mc, all ranges. **Ranges:** Ten ranges from 0.01 to 300 volts RMS full scale. **Decibels:** ten switch selected ranges from —40 db to +50 db in 10 db steps. **Input impedance:** Total range —52 to +52 db, meter scale —12 to +2 db. (0 db = 1 mw in 600 ohms), 10 megohms shunted by 12 uuf on ranges 10 to 300 volts; 10 megohms shunted by 22 uuf on ranges .01 to 3 volts. **Tube complement:** (1) 6AW8, (1) 6EJ7/EF-184. **Accuracy:** Within 5% of full scale. **Power requirements:** 105-125 volts AC, 50-60 cycles, 10 watts. **Dimensions:** 7⅜" H x 4-11/16" W x 4⅛" D.

Priced For Savings . . . Heathkit® Test Gear

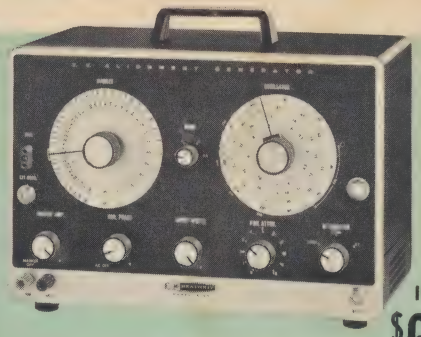
TV Sweep Alignment Generator . . . Speeds Alignment Of FM & TV Receivers!

• Stable, all-electronic sweep circuit • Complete FM & VHF TV coverage—3.6 to 220 mc • Built-in crystal & variable marker oscillators • Versatile, easy to operate, reliable

Produces Wide Range Sweeps With Excellent Linearity & Stability! Fixed & variable attenuators give smooth control of signal output to allow alignment of high gain stages without danger of overloading. Crystal included provides output at 4.5 mc & multiples thereof for calibrating built-in variable marker oscillator.

Kit IG-52, 14 lbs., no money dn., $7 mo. **$67.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-52 SPECIFICATIONS—Output impedance: 50 ohms terminated at both ends of cable. **Sweep deviation:** Continuously variable from 0-4 mc lowest max. deviation to 0-42 mc highest max. deviation (depending on base frequency). **Crystal marker:** 4.5 mc and multiples thereof. **Variable marker:** 19 mc to 60 mc on fundamentals, 57 mc to 180 mc on harmonics. **External marker terminals:** Provided on panel. **Attenuators:** Step-switch controls sweep and marker oscillators together, plus variable controls for each output. **Blanking:** Converts return trace into zero reference line, phasing control also provided. **Cables:** 3 supplied, output, scope horizontal, scope vertical. **Power requirements:** 105-125 VAC, 60 cycles, 50 watts. **Dimensions:** 13" W x 8½" H x 7" D.



IG-52
$67.95

Heathkit Color Bar & Dot Generator . . . Simplifies Color & B/W TV Servicing!

• Produces 6 different patterns for picture adjustment • 10 vertical color bars • Special shading bar pattern for screen & background adjustments • Crystal-controlled for accuracy & stability

Best Buy In Color TV Service Instrument! Provides instant switch selection of 6 different patterns . . . white dots, crosshatch, vertical bars, horizontal bars, 10 color bars & a special shading pattern. Crystal-controlled sync pulses lock patterns firmly on screen for linearity, color or convergence adjustments. Complete with crystals, test lead & instructions. Easy to build.

Kit IG-62, 13 lbs., no money dn., $7 mo. **$64.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-62 SPECIFICATIONS—RF output frequency range: TV channels 2 through 6. **Output voltage:** Variable from 100 to 100,000 microvolts. **Sound carrier:** Crystal controlled, unmodulated, 4.5 mc away from picture carrier; off-on switch provided. **Video output:** Positive or negative output variable from 0-10 volts peak-to-peak open circuit. **Modulation:** White dot pattern, cross hatch pattern, horizontal bars, vertical bars, 10 vertical color bars, shading bar pattern. **Power requirements:** 117 VAC, 50/60 cycles, 70 watts. **Dimensions:** 13" W x 8½" H x 7" D.

IG-62
$64.95

Heathkit FM Stereo Generator . . . Adds Extra Profits To Service Operations!

• Provides virtually all signals required for trouble-shooting & alignment of multiplex adapters, FM tuners & receivers • Switch selection of 400 cps, 1000 cps, 5000 cps, 19 kc, 38 kc & 65 kc or 67 kc SCA signals • Built-in marker oscillator for I.F. and dial tracking checks

A Self-Contained FM Service Center! Produces an audio or composite stereo signal for multiplex adapter adjustments . . . an RF carrier for tuner & receiver adjustments . . . a "phase-test" function for accurate adjustment of sub-carrier transformers . . . a variable level crystal-controlled 19 kc (±2 cps) pilot signal to check lock-in range of stereo receivers, and built-in sweep & marker signals for overall RF & IF alignment. Complete with test leads, and detailed stereo alignment instructions.

Kit IG-112, 11 lbs., no money dn., $10 mo. **$99.00**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-112 SPECIFICATIONS—RF Signal output: Center frequency: 100 mc adjustable by appox. ±2 mc. **Pilot modulating frequency:** 19 kc ±2 cps. **FM Modulation:** Left channel (stereo), right channel (stereo), Phase test (left plus right channel in phase), Monophonic FM. **Deviation:** Adjustable to 75 kc. **Sweep rate:** (use for RF and IF alignment) 60 cps. **Sweep width:** (use for RF and IF alignment) Adjustable to 750 kc. **RF Attenuator range:** 60 db in 20 db steps. **Crystal-controlled markers:** 10.7, 90.95, 96.30, 101.65, & 107 mc. **Composite signal output:** Left channel (stereo); Right channel (stereo). Phase test (left plus right channels in phase). **Audio output:** 400, 1000, & 5000 cps; 19 kc (±2 cps), 38 kc; & SCA (65 or 67 kc). **Distortion:** (At 400, 1000 & 5000 cps) Less than 5%. **Front panel controls:** 19 kc pilot level control, deviation—sweep width-composite level-audio level control, function switch, frequency switch, & RF attenuator switches. **Rear panel adjustments:** Balance adjust, 38 kc sync, pilot level adjust, & SCA frequency switch. **Chassis adjustments:** Oscillator adjust, frequency adjust & modulation adjust. **Power requirements:** 105-125 volts AC, 50/60 cps, 35 watts. **Dimensions:** 10¼" H x 8" D x 13" W.

IG-112
$99.00

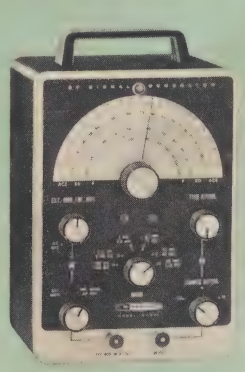
Heathkit RF Signal Generator . . . A Valuable Addition To Any Test Bench!

• Covers 100 kc to 220 mc in 6 bands • Large, accurately calibrated dial scales • Prewired, prealigned coil/bandswitch assembly • Modulated or unmodulated RF output • 400 cps signal for audio tests

Countless Applications In Radio & TV Service Work! Provides all essential generator facilities for fast, easy alignment of RF & IF circuits in AM tuners and receivers. Achieves 2% accuracy on all bands for pinpoint frequency settings. RF output controlled by both fixed-step & variable attenuators. Internal 400 cps signal with 10 volt output available separately for audio tests.

Kit IG-102, 6 lbs., no money dn., $5 mo. **$27.95**
Assembled IGW-102, 6 lbs., no money dn., $6 mo. **$54.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-102 SPECIFICATIONS—Frequency range: Band A, 100 kc to 320 kc; Band B, 310 kc to 1.1 mc; Band C, 1 mc to 3.2 mc; Band D, 3.1 mc to 11 mc; Band E, 10 mc to 32 mc; Band F, 32 mc to 110 mc. **Calibrated harmonics:** 110 mc to 220 mc. **Accuracy:** 2%. **Output:** Impedance, 50 ohms; Voltage, 100,000 uv. **Modulation:** Internal, 400 cps, 30% depth; External, approx. 3 V across 50 k ohms for 30%. **Audio output:** Approx. 10 V open circuit. **Power requirements:** 105-125 V 50/60 cycles AC, 15 watts. **Dimensions:** 6½" W x 9½" H x 5" D.



Kit IG-102
$27.95

Wired IGW-102
$54.95

Laboratory RF Generator . . . Ideal For Design & Development Work!

• Metered output voltage and % modulation • Operates on fundamentals—100 kc to 30 mc in five bands • Double shielding of all oscillator circuits • Easy to build

Professional Quality Throughout! Ideal for stage gain measurements and RF alignment work. Features transformer operated power supply . . . generous filter design and voltage regulation for smooth plate voltage . . . 50 ohm generator output impedance . . . and variable modulation from 0 to 50% at 400 cycles internally, between 60 to 10,000 cps externally.

Kit IG-42, 15 lbs., no money dn., $6 mo. **$56.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-42 SPECIFICATIONS—Frequency ranges: Band A, 100 to 290 kc; Band B, 280 to 1000 kc; Band C, 0.95 to 3.1 mc; Band D, 2.9 to 9.5 mc; Band E, 9 to 31 mc. **RF output:** Impedance, 50 ohms—voltage, 100,000 microvolts max. **Attenuator:** 10:1 per step, 5 steps—Fine, 10:1 continuous, indicated on meter. **Amplitude modulation:** CW, internal 400 cycles or external audio frequencies. **Modulation depth:** 0 to 50% variable, indicated on meter. **Power requirements:** 105-125 V. 50/60 cycles. **Dimensions:** 13" W x 8½" H x 7" D.

IG-42
$56.95

Heathkit "Low-Ripple" Battery Eliminator . . .
A "Must" For Servicing Mobile Equipment

• Convenient switch-selection of 6 or 12 volt DC power • Special ripple filter circuit holds AC ripple to less than .3% • Panel metered output voltage & current • Doubles as a convenient battery charger • Heavy-duty well-rated components throughout

Provides smooth 6 or 12 volt DC power for transistorized or hybrid radios.

Kit IP-12, 18 lbs., no money dn., $5 mo. **$47.50**
Assembled IPW-12, 17 lbs., no money dn., $6 mo. **$59.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

IP-12 SPECIFICATIONS—Continuously variable output: 6 volt range: unfiltered, 10 amp continuous, 15 amp maximum; filtered, 5 amp continuous, less than .3% ripple. 12 volt range: unfiltered, 5 amp continuous, 7.5 amp maximum; filtered, 5 amp continuous, less than .3% ripple. **Power requirements:** 105-125 volts 50/60 cycles AC at 200 watts. **Dimensions:** 13" W x 8½" H x 7" D.

Kit IP-12 **$47.50**
Wired IPW-12 **$59.95**

Heathkit Variable-Voltage Regulated Power Supply

• Furnishes B+, Bias, & Filament voltages • DC output variable from 0 to 400 volts • Separate panel meters monitor output voltage & current • Output terminals isolated for safety in AC/DC work

Separate switching allows high voltages to be switched "off" while filaments remain "on".

Kit IP-32, 17 lbs., no money dn., $6 mo. **$56.95**
Assembled IPW-32, 18 lbs., no money dn., $9 mo. **$84.95**

IP-32 SPECIFICATIONS—Output: 0-400 volts regulated DC at 0-100 ma cont., 125 ma intermittent, 0 to -100 volts DC at 1 ma variable bias voltage, 6.3 volts AC at 4 amps., filament voltage. **Regulation:** Output variation less than 1% from no load to full load. Output variation less than 1% for a ± 10 v. change at 117 V. AC input. **Ripple:** Less than 10 millivolts RMS, ripple, jitter and noise. **Output impedance:** Less than 10 ohms, DC to 1 mc. **Meters:** Voltmeter 0-400 V or 0-150 V.; Milliammeter 0-150 ma. **Dimensions:** 13" W x 8½" H x 7 " D.

Kit IP-32 **$56.95**
Wired IPW-32 **$84.95**

"Solid-State" Regulated DC Power Supply . . .
0.5 To 50 VDC @ Up To 1.5 Amperes With Less Than 150 Microvolts AC Ripple!

• All-transistor solid-state circuitry • Relay protected against short circuit & overload • Four current ranges, 50 MA, 150 MA, 500 MA & 1.5 A. • Adjustable current limiter, 30 to 100% on each range • Series type voltage regulator, zener diode reference

A Tremendous Value In A DC Supply! . . . Both current & voltage regulation.

Kit IP-20, 13 lbs., no money dn., $8 mo. **$72.95**
Assembled IPW-20, 16 lbs., no money dn., $11 mo. **$114.95**

IP-20 SPECIFICATIONS—Input: 105-125 volts 60 cps; 125 watts at full load (50V, 1.5A). **Output:** 0.5-50 volts DC; 1.5 amps max. DC. **Load regulation:** ± 15 millivolts, can be adjusted for no change. **Line regulation:** (105 to 125 VAC): Less than .005% change. **Ripple & noise:** Less than 150 microvolts. **Transient response:** Less than 25 microseconds. **Output impedance:** Less than .1 ohm DC to 10 kc; less than .5 ohms 10 kc & up. **Overload protection:** Current limiter & relay. **Meter:** 3½", 1 ma, 50 ohm. **Meter current ranges:** 50 ma, 150 ma, 500 ma, 1.5 amp. **Meter voltage ranges:** 5V, 15V, 50V. **Front panel controls:** On/Off, Coarse voltage switch, Fine voltage adjust, Current range switch, Current limit adjust, Meter slide switch, DC regulation, Reset Standby toggle switch. **Output terminals:** (3), plus (+), minus (—), chassis ground. **Dimensions:** 9½" H x 6½" W x 11" D.

Kit IP-20 **$72.95**
Wired IPW-20 **$114.95**

Heathkit Sine-Square Wave Generator

• Covers 20 cps to 1 mc in 5 bands . . . from bottom of audio band to half way through the broadcast band • Less than .25% sine wave distortion • Less than .15 microsecond square wave rise time • Sine and square wave output available simultaneously

A Dependable Instrument For HI-Fi And General Audio Testing.

Kit IG-82, 14 lbs., no money dn., $6 mo. **$51.95**
Assembled model EUW-27, pg. 34, 14 lbs., no money dn., $10 mo. **$94.00**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-82 SPECIFICATIONS—SINE WAVE: Frequency range: 20 cycles to 1 mc. **Output volts (RMS):** 0 to 10 volts, 0 to 1 volt, 0 to .1 volt, or 0 to .01 volt when working into a high impedance load. **Source impedance:** (±10%): 10 volt range, 0 to 3.5 k ohm; 1V, .1V and .01V range, 600 ohm. **Distortion:** Less than .25%, 20 to 20,000 cycles. **Frequency response:** ±1.5 db 20 cycles to 1 megacycle. **SQUARE WAVE: Frequency range:** 20 cycles to 1 mc. **Output volts:** (P. to P.) ±5%; 0 to 10 volt, 0 to 1 volt, 0 to .1 volt, into a high impedance load. **Source impedance:** (±10%): 10 volt range, 0 to 220 ohm; 1V and .1V ranges, 52 ohm. **Rise time:** less than .15 microsecond. **GENERAL:** Frequency accuracy; ±5%. **Power requirements:** 105-125V AC, 50/60 cycles, 55 watts. **Dimensions:** 13" W. x 8½" H. x 7" D.

Kit IG-82 **$51.95**
Wired (as model EUW-27) **$94.00**

Heathkit Switch-Selected Audio Frequency Generator
Produces Near-Perfect Sine Wave Signals

• Switch-selected output frequencies—10 cps to 100 kc • Less than 0.1 of 1% distortion—20 to 20,000 cps • Panel metered output is calibrated in volts & db • Output level and frequency accurate to within ±5%

Metered Output Voltage Enables Accurate Hi-Fi Circuit Analysis.

Kit IG-72, 8 lbs., no money dn., $5 mo. **$41.95**
Assembled IGW-72, 9 lbs., no money dn., $7 mo. **$64.95**

Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-72 SPECIFICATIONS—Frequency: 10 cps to 100 kc, switch selected, 2 significant figures and multiplier. **Output:** 6 ranges 0 to .003, .01, .03, .1, .3, 1 volt RMS into external 600 ohm load or with internal load into Hi-Z, 2 ranges 0 to 3, 10 volts RMS into a minimum of 10,000 ohms, —60 db to +22 db in 8 steps, —60 dbm to +2 dbm (0 dbm=1 mw into 600 ohms). **Distortion:** less than .1%, 20 to 20,000 cps. **Tubes:** (1) 6AU6, (1) 6CL6, (1) 6X4. **Power:** 105-125 volts AC, 50/60 cycles, 40 watts. **Dimensions:** 9½" W x 6½" H x 5" D.

Kit IG-72 **$41.95**
Wired IGW-72 **$64.95**

Heathkit Capacitor Checker

• Tests all capacitor types • Low bridge voltage for safe testing of miniature electrolytics • 16 leakage testing voltages • Direct reading scales—no involved calculations • Measures resistance from 5 ohms to 50 megohms • Measures capacitance from 10 uuf to 1,000 mfd • Comparator circuit—measures "L", "C", or "R" with external standard • Calibrated power factor control • "Eye" tube null & leakage indicator

Kit IT-11, 7 lbs., no money dn., $5 mo. **$29.95**
Assembled ITW-11, 9 lbs., no money dn., $5 mo. **$49.95**

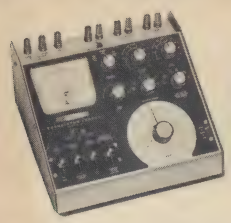
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IT-11 SPECIFICATIONS—Test circuit: AC bridge, powered through special bridge transformer by an internal 60 cycle supply or by an external audio generator with 10 volts output. Upper frequency limit: 10 kc. **Capacitance, 4 ranges:** 10 uuf to .005 ufd; .001 ufd to .5 ufd; .1 ufd to 50 ufd; 20 ufd to 1000 ufd. **Capacitor leakage:** DC test voltages from 3 to 600 volts in 16 steps. **Resistance, 3 ranges:** 5 ohms to 5000 ohms; 500 ohms to 500 K ohms; 50 K ohms to 50 megohms. **Comparator circuit:** External standard R, L or C; Max. Ratio 25-1. **Power supply:** Transformer-operated, half-wave rectifier. **Power requirements:** 105-125 volts AC, 50/60 cycles, 30 watts. **Dimensions:** 9½" high x 6½" wide x 5" deep.

Kit IT-11 **$29.95**
Wired ITW-11 **$49.95**

In Test Instruments

HEATHKIT®



Now Available Kit or Assembled . . . Heathkit Laboratory Transistor Tester

IM-30 **$54.88**

• Provides complete DC analysis of PNP & NPN transistors • Provisions for checking high voltage & high current transistors through external supplies

Kit IM-30, 9 lbs., no money dn., $6 mo. **$54.88**
Assembled IMW-30, 10 lbs., no money dn., $9 mo. **$84.95**

IM-30 SPECIFICATIONS—Checks: Transistors up to 15 amps and diodes up to 1.5 amps. **Tests:** Shorts, DC Gain (Beta 0-300) (Alpha 0-.9967), Leakage (Icbo, Iceo), Diode Forward & Reverse Current. **Power supply:** Internal, seven 1.5 volt size D batteries provide 1.5, 3, 4.5, 6, 7.5, 9 volts collector supply for gain or leakage and 1.5 volts for bias; external, 0-50 volts for gain, 0-150 volts for leakage and 0-5 volts for bias. **Bias control:** Permits any collector current from 10 ua to 15 amps for gain tests. **Gain control:** 3% wire-wound potentiometer has calibrated scales to give DC Beta and DC Alpha directly when meter is at null. **Transistor & diode connections:** Universal transistor socket and binding posts.

Heathkit Mutual-Conductance Tube Tester

TT-1A **$149.95**

• No finer tube tester in kit form anywhere! • Indicates Gm to 24,000 micromhos • Ultra-sensitive grid current test • Built-in calibration circuit for high accuracy

Kit TT-1A, 33 lbs. . . no money dn., $14 mo. **$149.95**

TT-1A SPECIFICATIONS—Power requirements: Voltage: 105-125, 60 cycle AC. Watts: 10-60. **Testing circuits:** Gm; mutual conductance for amplifiers, 0-24,000 micromhos. Emission: rectifiers & diodes. Leakage: direct reading ohmmeter. Grid current: ¼ microampere sensitivity. Voltage regulator: firing voltage and regulation tolerance. Low power thyratron: grid characteristics, conduction capabilities. Eye tubes: control grid characteristics. **Line voltage adjustment:** Continuously variable. **Roll chart mechanism:** Constant tension, illuminated. **Dimensions:** Cabinet (outside): 17¾" W x 13½" H x 8" D. Panel & chassis: 17" W x 12¾" H x 5½" D.

Heathkit Tube Checker

IT-21 **$44.95**

• Tests standard types plus Compactrons, Nuvistors, Novars, and 10-pin miniatures • Multi-colored "bad-?-good" meter scale • Lighted meter • Constant tension roll chart • Easy assembly

Kit IT-21, 12 lbs., no money dn., $5 mo. **$44.95**

IT-21 SPECIFICATIONS—Tests: Emission, short, leakage, open element, filament continuity. **Sockets:** 4-pin, 5-pin, 6-pin, 7-pin combination and pilot light, 7-pin miniature, octal, loctal, 10-pin miniature, 9-pin novar, 12-pin compactron, 5-pin nuvistor, 7-pin nuvistor. **Meter:** 1 ma, BAD-?-GOOD scale, illuminated. **Line voltage adjustment:** Step type. **Roll chart mechanism:** Constant tension, illuminated. **Power requirements:** 105-125 VAC, 50/60 cps. **Dimensions:** 5½" x 8½" x 13".

Heathkit Audio Analyzer

• Combines the functions of 3 separate instruments — AC VTVM, Wattmeter & Intermodulation Analyzer • Built-in high & low frequency sources for IM tests (60 cps & 6 kc) • Built-in load resistors for 4, 8, 16 & 600 ohms • Meter calibrated in VAC, Watts (.15 mw to 150 w), db from —65 to + 52 dbm

IM-22 **$56.95**

Kit IM-22, 13 lbs., no money dn., $6 mo. **$56.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Heathkit Harmonic Distortion Meter

IM-12 **$54.95**

• Measures harmonic distortion from 20 to 20,000 cps • Distortion is read direct—volts RMS, % distortion, & db • Measures noise levels down to —60 dbm

Kit IM-12, 13 lbs., no money dn., $6 mo. **$54.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IM-12 SPECIFICATIONS—Frequency: 20-20,000 cps. **Distortion:** 1 to 100% full scale, 5 ranges. **Voltmeter:** 1, 3, 10, 30 volts full scale. **Minimum input:** 0.3 volts. **Input resistance:** 300k ohm. **Accuracy:** Voltmeter & distortion ±5% full scale. **Power requirements:** 105-125V. 50/60 cps. AC, 30 watts. **Dimensions:** 13" W x 8½" H x 7" D.

Heathkit "In-Circuit" Capaci-Tester

IT-22 **$10.95**

• Spots open, shorted, or intermittent capacitors without removing them from the circuit • Fast & simple to use • Built-in self test

Kit IT-22, 4 lbs. **$10.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

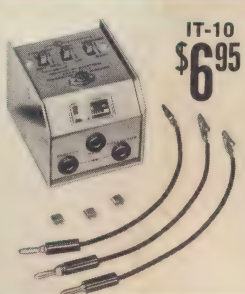
IT-22 SPECIFICATIONS—Range: Open Test, 50 uufd to infinity, shunted by more than 2 K ohms at 50 uufd, 400 ohms at 100 uufd, 30 ohms at 350 uufd or more. Short test, up to 20 ufd shunted by at least 10 ohms. **Test frequencies:** Short test, 60 cycles. Open test, 19 mc. **Power requirements:** 105-125 V, 50-60 cycles AC, 5 watts. **Cabinet size:** 7⅜" H x 4-11/16" W x 4⅛" D.

Heathkit Visual-Aural Signal Tracer

• Traces RF, IF and audio signals • Quickly locates defective stage in circuit under test • Single, convenient audio-RF probe with switch • Doubles as a test-bench utility amplifier/speaker

Kit IT-12, 6 lbs. **$19.95**
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IT-12 **$19.95**



IT-10 **$6.95**

Heathkit Transistor-Diode Checker

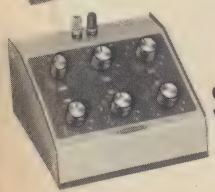
• Checks for leakage, short, open, and tests for current gain • Checks diode forward and reverse current • Operates on two standard size "C" flashlight batteries • Quick to assemble

Kit IT-10, 2 lbs. **$6.95**

IN-21 **$17.95**

Heathkit Decade Boxes

3-Decade Condenser Kit . . . provides switch-selected capacitance values from 100 uuf to 0.111 uf in 100 uuf steps and ±1% accuracy. Cabinet—7⅛" W x 4" H x 5" D.
Kit IN-21, 3 lbs. **$17.95**



IN-11 **$24.95**

6-Decade Resistance Kit . . . for ½% accurate resistance values from 1 to 999,999 ohms in one ohm steps. 1-watt resistors. Dimensions: 7½" W x 5" H x 6⅝" D.
Kit IN-11, 3 lbs., no money dn., $5 mo. **$24.95**

IN-12 **$5.95**

Heathkit Component Substitution Boxes

Resistance Substitution Box Kit . . . switch selects any one of 36 E.I.A. standard 10% 1-watt resistors ranging from 15 ohms to 10 megohms. Case 5⅜" L x 3⅛" W x 3" H.
Kit IN-12, 2 lbs. **$5.95**

IN-22 **$5.50**

Condenser Substitution Box Kit . . . selects any one of 18 common E.I.A. standard capacitor values ranging from 0.0001 uf to 0.22 uf. 400 v. minimum. Case 5⅜" L x 3⅛" W x 3" H.
Kit IN-22, 2 lbs. **$5.50**

HEATH COMPANY
Benton Harbor, Michigan 49022

THIRD CLASS

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POSTMASTER—IF UNDELIVERABLE
PLEASE DO NOT RETURN

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U. S. POSTAGE
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Hinsdale, Ill.
Permit No. 300

Job Opportunities
ENGINEERS & TECHNICIANS

Due to expansion, we now have job openings in our Service and Engineering departments for technicians and engineers. We offer good salaries, liberal employee benefits, and a pleasant working atmosphere in our modern plant located on the eastern shore of Lake Michigan. Excellent school, shopping and recreational facilities. You'll live within minutes of work. If interested, write to:

W. F. Donahue
Director of Personnel
Heath Company
Benton Harbor, Michigan 49022

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VASSAR COLLEGE
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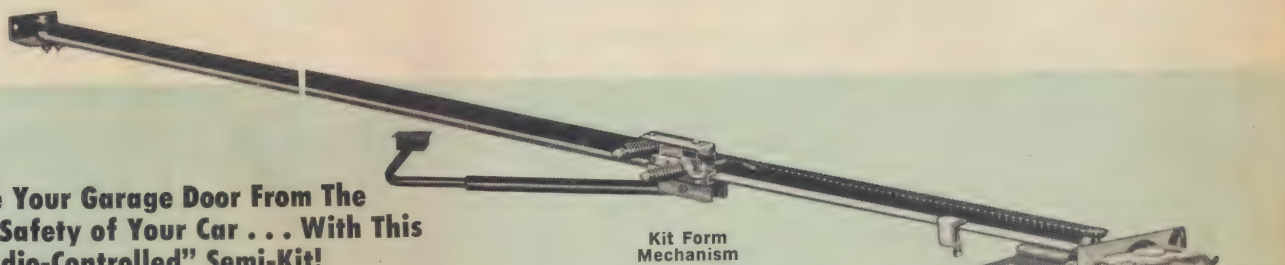
All prices quoted are Net F.O.B. Benton Harbor, Michigan and apply to United States and Possessions only.
Prices and Special Offers herein effective March 1, 1966.
All prices and specifications subject to change without notice.
Dealers and export prices slightly higher.



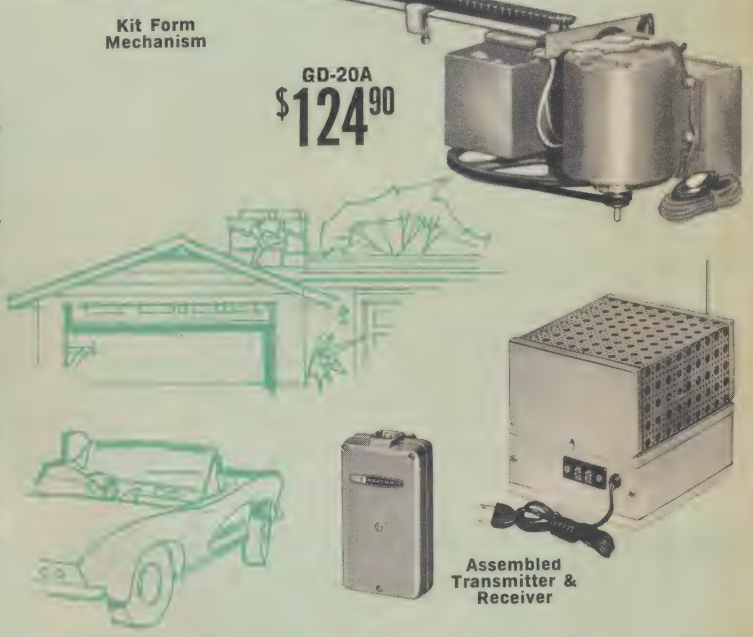
Open & Close Your Garage Door From The Comfort and Safety of Your Car . . . With This Heathkit "Radio-Controlled" Semi-Kit!

• VHF portable "wireless" transmitter—so compact it fits in pocket & purse, or attaches to car's sun visor • No car battery drain • No permanent under-hood installation • VHF receiver—installs in your garage in mere minutes • Operates at greater ranges—no CB interference • Easy one-man installation • Operates overhead track and most jamb & pivot doors up to 8' high • Foolproof Heath patented safety device automatically disengages door when obstructed • Automatically turns on garage light when door is opened • Just assemble mechanism—transmitter & receiver are completely assembled, ready to use • No FCC license required—complies with FCC regulations • Operates well within new FCC radiation limits . . . won't interfere with aircraft radio frequencies • 2 year warranty on receiver & transmitter

Especially Convenient in Bad Weather Or Late At Night . . . especially convenient for Mom or elder members of your household! Just a touch of the button on the "wireless" transmitter as you pull into your driveway, and your garage door opens and the light goes on. Another touch of the button once you're safely inside and the door closes automatically. A time delay on the mechanism-operated light allows plenty of time to enter the house or turn on the main lights.

Won't Interfere With Similar Neighborhood Units . . . Easy To Use From Car To Car! Simply clip the pocket-size transmitter to sun visor, or store in glove compartment. And since it's wireless, there's no complicated mounting under the hood or dash. A self-contained battery eliminates car battery drain. You build only the mechanism . . . transmitter & receiver are preassembled. Automatic light feature may be extended to control driveway or patio lights.

GD-20A, 69 lbs. . . . mechanism, (1) transmitter, (1) receiver . . . no money down, $12 mo. **$124.90**
GD-20B, 69 lbs. . . mechanism, (2) transmitters, (1) receiver . . . no money down, $14 mo. **$144.90**
Kit GDA-20-3 Heathkit mechanism, 61 lbs. no money dn., $7 mo. . . **$69.95**
GDA-20-4, (1) Transmitter, (1) Receiver . . . 8 lbs. . . . no money dn., $6 mo. **$54.95**
GDA-20-5, (2) Transmitters, (1) Receiver . . . 8 lbs. . . . no money dn., $8 mo. **$74.95**



KIT MECHANISM SPECIFICATIONS—125" long x 8⅝" high x 13" wide. 100# max. operating force. Operates overhead track and most jamb & pivot doors up to 8' high. 117 V. AC. ¼ H.P. motor. Fused.
VHF TRANSMITTER SPECIFICATIONS—Powered by two Eveready #E-91 alkaline batteries. Uses one of six modulation frequencies approx. 16 kc, 18 kc, 20 kc, 22 kc, 24 kc, 26 kc. CK 5676 RF osc. tube, 2N270 audio osc. transistor. 5½" H x 3" W x 1⅜" D.
VHF RECEIVER SPECIFICATIONS—117 VAC, 10 watts. 6AB4 RF amplifier, 12AT7 detector-amplifier, 12AT7 amplifier-rectifier, 5696 relay control. RF frequencies approx. 225 mc, 230 mc, 235 mc, 250 mc, 255 mc, 290 mc, 295 mc. 5¾" H x 6" W x 6½" D.

HEATH COMPANY

Benton Harbor, Michigan 49022

ORDER FORM

PHONE • 616-983-3961 **FAX**—BENTON HARBOR, MICHIGAN **TWX**—616-983-3897

1 PLEASE PRINT OR WRITE NAME AND ADDRESS PLAINLY

NAME

ADDRESS

CITY STATE ZIP

PLEASE DO NOT WRITE IN THIS SPACE

2 SHIP TO ANOTHER ADDRESS? Give directions here.

NAME

ADDRESS

CITY STATE ZIP

3 CHECK HOW YOU WANT ORDER SHIPPED ▶ Parcel Post ☐ *Motor Freight ☐ (100 lb. min. chg.) Express ☐

ON EXPRESS ORDERS if station is in different town than your post office address, show name of town where shipment should be sent:

7 TOWN STATE

4 IF YOU HAVE MOVED SINCE YOUR LAST ORDER—write your old address here:

STREET ADDRESS

CITY STATE ZIP

5 TO HELP US SERVE YOU BETTER, will you please answer the following questions?

What type of Heathkit interests you most? ☐ Hi Fi ☐ Instruments ☐ Amateur Radio ☐ Marine ☐ Other

What new Heathkits would you like us to make?

6 IS THIS YOUR FIRST ORDER? ☐ YES ☐ NO

SHD.	B. O.	QUAN.	MODEL	KIT DESCRIPTION	WT.	PRICE EA.	TOTAL
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						

IMPORTANT. Please use a separate sheet for all correspondence, to assure a prompt reply to your letter.

All prices quoted are net F.O.B. Benton Harbor, Michigan, and apply to the United States, F.P.O. and A.P.O. areas.

All prices and specifications subject to change without notice.

Orders F.P.O. and A.P.O. must include sufficient postage.

C.O.D. ORDERS must be accompanied by 20% deposit. Delivering carrier will require cash or certified check in payment of C.O.D. amount.

PARCEL POST ORDERS should include postage for weight shown. Transportation costs for all express or motor freight shipments will be collected at the time of delivery.

SEE REVERSE SIDE for time pay details on orders of $25 or more.

***MOTOR FREIGHT CHARGES** will not be less than $4.91, as you pay for 100 lbs. Since rates vary with localities, consult your local truck line.

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8 TYPE OF ORDER (CHECK ONE)

☐ **CASH** Please use registered mail for currency.

☐ **C.O.D.** 20% deposit required.

☐ **TIME PAY.** See reverse side for time pay details on orders of $25 or more.

☐ **ADD ON** If previous time pay customer, give current account number

9 MERCHANDISE ORDERED

FROM CAT. NO.

10

A. Allowance if offered	
B. TOTAL AMOUNT OF ORDER.	
C. Add sales tax on all deliveries in the State of Michigan.	
D. Amount for parcel post. Do not remit for express charges.	
E. Amount due from previous order Inv. #	
F. TOTAL AMOUNT	
G. TIME PAY DOWN PAYMENT	
H. 20% C.O.D. deposit	
I. UNPAID BALANCE (total order less down payment or C.O.D. deposit)	

800/62-2

Open Your Heath Account—Liberal Terms

NOTICE TO BUYER:
Mail Order/Retail Installment Contract

Do not sign this contract before you read it. Under the law you have the following rights among others:

A. To pay off in advance the full amount due.

B. Under certain conditions to redeem the property, if repossessed for a default.

Time Payments are available to anyone in the U.S. or FPO and APO areas. Residents of Puerto Rico and other U. S. possessions, write for details!

LIBERAL TERMS! No money down on orders up to $300 (Down payments reduce monthly payments and carrying charges). 10% down and up to 18 months to pay on orders over $300. Write for details on order over $500.

HERE'S ALL YOU DO . . .

1. Fill out order blank in the catalog.
2. Sign your name in the Time Payment Agreement below.
3. Fill in the Credit Statement and the monthly payment (see chart).
4. Send the above to the Heath Company, Benton Harbor, Michigan . . . we'll take care of the details.

"ADD ON" Purchases—Once your credit is established and you have made at least three payments, you can "add-on" purchases of $25.00 or more with no down payment. List the items you want on the reverse side, check (8) the "add on" box and give your account number. Be sure to sign the Time Payment Agreement and send to us with your original Payment Book.

EASY PAYMENT CHART

Unpaid Balance	Carrying Charge	Up To 12 Monthly Payments*	Unpaid Balance	Carrying Charge	Up to 12 Monthly Payments*
Up to $20.00	$ 2.00	$ 5.00	$250.01-260	$26.00	$24.00
$ 20.01-30	3.00	5.00	260.01-270	27.00	25.00
30.01-40	4.00	5.00	270.01-280	28.00	26.00
40.01-50	5.00	5.00	280.01-290	29.00	27.00
50.01-60	6.00	6.00	290.01-300	30.00	28.00
60.01-70	7.00	7.00	300.01-310	31.00	29.00
70.01-80	8.00	8.00	310.01-320	32.00	30.00
80.01-90	9.00	9.00	320.01-330	33.00	31.00
90.01-100	10.00	10.00	330.01-340	34.00	32.00
100.01-110	11.00	11.00	340.01-350	35.00	33.00
110.01-120	12.00	11.00	350.01-360	36.00	34.00
120.01-130	13.00	12.00	360.01-370	37.00	35.00
130.01-140	14.00	13.00	370.01-380	38.00	36.00
140.01-150	15.00	14.00	380.01-390	39.00	37.00
150.01-160	16.00	15.00	390.01-400	40.00	38.00
160.01-170	17.00	16.00	400.01-410	41.00	39.00
170.01-180	18.00	17.00	410.01-420	42.00	40.00
180.01-190	19.00	18.00	420.01-430	43.00	41.00
190.01-200	20.00	19.00	430.01-440	44.00	42.00
200.01-210	21.00	20.00	440.01-450	45.00	43.00
210.01-220	22.00	21.00	450.01-460	46.00	44.00
220.01-230	23.00	22.00	460.01-470	47.00	45.00
230.01-240	24.00	22.00	470.01-480	48.00	46.00
240.01-250	25.00	23.00	480.01-490	49.00	47.00
			490.01-500	50.00	48.00

*All monthly payments are for the amount shown; last payment is for the odd amount remaining due.

Up to 18 Months	
Carrying Charge	Monthly Payment*
$46.50	$20.00
48.00	21.00
49.50	22.00
51.00	22.00
52.50	23.00
54.00	23.00
55.50	24.00
57.00	25.00
58.50	25.00
60.00	26.00
61.50	27.00
63.00	28.00
64.50	29.00
66.00	29.00
67.50	30.00
69.00	30.00
70.50	31.00
72.00	31.00
73.50	32.00
75.00	32.00

Check if balance is over $300 and 18 mos. desired ☐

TIME PAYMENT AGREEMENT

NOTE: Time payment agreement cannot be accepted from persons under 21 years of age. If you are under 21, have this form filled out by a person of legal age, regularly employed or engaged in business. He can make the purchase for you, and will be responsible for payment.

TO: HEATH COMPANY BENTON HARBOR, MICHIGAN

Enclosed is a deposit of $_____ on the Easy Payment cost of the equipment on the reverse side. I will pay $_____ each month to you at the above address starting 30 days after shipment, until the total time payment price is paid.

Title to and right of possession of said equipment shall remain with you until all payments have been made. Upon default on any payment due on this contract, the full amount unpaid hereon, at your option, shall become immediately due and payable and you may either hold me liable for said amount or repossess the equipment. If you shall repossess, all payments made may be retained as rent for the use and depreciation of said equipment. The loss, injury or destruction of the equipment after I have received it shall not operate as payment or in any manner release me from any obligation hereunder.

If this order is not accepted, you shall refund the down payment with notice of non-acceptance. Acceptance shall be effected when the equipment designated on the reverse side hereof is shipped to me. I certify that all statements in the Credit Statement set forth below are true and complete and are made for the purpose of obtaining credit. This contract is to be governed by the laws of the State of Michigan.

Enter Date_____ Sign Here_____

CREDIT STATEMENT

(IMPORTANT: Please fill in completely. Omissions and errors cause delays.)

PRINT FULL NAME_____ (First / Middle / Last) Age_____ Military Serial No. (if serviceman)_____

WIFE'S NAME_____ Names of Children and ages_____

Residence_____ City_____ State_____ How Long_____

☐ Own or Buying ☐ Rent ☐ Live with Parents No. of Rooms_____ Paid Monthly $_____ Phone No._____

Landlords If Owned Name Mtg. Held By_____ Street_____ City_____ State_____

Previous Address_____ City_____ State_____ How Long_____

Previous Landlord_____ Address_____

Employed by_____ Street_____ City_____ State_____

Position_____ How Long_____ Dept. or Badge No._____ Salary $_____

Previous Employer_____ Street_____ City_____ State_____ How Long_____

Wife's Employer_____ Street_____ City & State_____

Position_____ How Long_____ Dept. or Badge No._____ Salary $_____

Other Income—Give Details_____ Total Family Income $_____

Your Bank_____ Address_____ Type of Account_____

CREDIT REFERENCE (Give 2 Merchants, Firms or Finance Companies with whom you do or have done business.)

First Credit Reference_____ Address_____ Present Balance $_____ Monthly Payment $_____

Second Credit Reference_____ Address_____ Present Balance $_____ Monthly Payment $_____

Nearest Relative_____ Address_____ Relationship_____
(Do not list those with whom you are living)

NAME

ADDRESS

CITY & STATE ZIP

PLACE STAMP HERE

HEATH COMPANY

BENTON HARBOR,

MICHIGAN 49022

NAME

ADDRESS

CITY & STATE ZIP

PLACE STAMP HERE

HEATH COMPANY

BENTON HARBOR,

MICHIGAN 49022

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Name_____

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City_____ State_____ Zip_____

Name_____

Address_____

City_____ State_____ Zip_____

Name_____

Address_____

City_____ State_____ Zip_____